THE JOURNAL

OF

Foreign Medical Science

AND

LITERATURE.

VOL. IV. OCTOBER, 1824. No. 16.

Quarterly History of Improvements and Discoveries, both at Home and Abroad, in Anatomy, Physiology, Pathology, Morbid Dissections, Surgery, Practice of Physic, Midwifery, Forensic Medicine, Materia Medica, Pharmacy, Chemistry, Botany, &c.

FORMING A USEFUL LIBRARY OF PRACTICAL REFERENCE.

(From the London Medical and Physical Journal for July, 1824.)

ANATOMY (NATURAL) AND PHYSIOLOGY.

ALTHOUGH it is not easy to draw an exact line of demarcation between some parts of minute anatomy and physiology, yet we shall endeavour, in the first place, to speak of matters relating purely to the disposition of parts, and afterwards proceed to those which involve an inquiry into functions.

The subject of Human Anatomy has been too long and too assiduously cultivated, to have left much for the present generation to accomplish in the way of discovery; and whatever improvements take place consist in new descriptions, new plates, or new arrangements, rather than in the development of any natural part or structure not already known. Of late years, indeed, anatomists, despairing of being able to find new muscles, nerves, or arteries, have devoted themselves to what may be termed the unravelling of textures; and the fibres of every organ (for example, of the heart,) have been followed with most praiseworthy patience, and every turn and bending of the most minute muscular thread have been described with the utmost precision; nerves have been traced until lost to the microscope; and arteries have received names, even to the "ramusculi ramusculorum." One great advantage is possessed by those who seek for discoveries of this kind,—we mean the extreme difficulty of detecting or proving their inaccuracy; so that,

when a description of some very minute piece of anatomy has once been given, it generally passes current for a considerable time, as not one in a thousand has either the opportunity or the patience to repeat the investigation. Nevertheless, some exceptions to this general barrenness of discovery are occasionally to be met with, one of which we formerly alluded to, in the detection of a new muscle in the orbit by Dr. HORNER, of Philadelphia.

FLAGANI *on the Tensor Tarsi Muscle and its Nerves**.—Professor Flagani, of Rome, in this paper controverts the discovery of Dr. Horner, and that of Trasmondi, mentioned above, and refers it to Duverney. It was described, he says, by Schobinger, 1730, in Haller's Disputationes Chirurgicæ, tomo I. In 1805, Rosenmuller gave a description, and a good figure of the nerves, the discovery of which is claimed by Trasmondi. See "Chirurgico-anatomica in usum medicorum et chirurgicorum." The figure of Trasmondi is said by Flagani to be bad, incorrect, and unnatural. As we have not the works referred to at hand, we cannot settle the disputed claim. Dr. Horner, we dare say, will reply.

Note by the Editor of the American Journal of Foreign Medical Science and Literature.

We regret that we have not yet been able to procure a copy of DUVERNEY's works, although the following extract from SCHOBINGER's Treatise "*de Fistula Lacrymali*," is sufficient to settle the question entirely, if the muscle were not mentioned and referred to by so many other authors. It is certainly very remarkable, that this structure should have been so much overlooked by all the more recent anatomists, after what had been published on the subject by DUVERNEY and others. Notwithstanding that Dr. HORNER's claim to the honour of discovering this muscle is entirely done away, yet it must not be forgotten, that we owe it to him, that it does not continue to remain in the profound oblivion to which it was condemned by the silence of the most celebrated modern anatomists and physiologists. We are not willing to believe that there is nothing new to be said, or, as TERENCE has it,

"Denique
Nullum est jam dictum, quod non dictum est prius."

But such an experience as the case now before us, teaches us the value of a precept obtained from the same author, that we should examine what has been done by others before we discover for ourselves;

"Quare æquum est vos cognoscere, atque [recordari]
Quæ *veteres* factitârunt, si faciunt *novi*."

SCHOBINGER.

Original.

Saccus idem (lacrymalis) circa exteriorem ac anteriorem partem PROPRIO EXIGUO MUSCULO, CIRCA OS PLANUM ORTO fibris suis supra dictam partem sese extendente gaudet, quem strenuus anatomicus ac chirurgicus D. DUVER-

Translation.

The lacrymal sac has on its external and anterior part A PECULIAR SMALL MUSCLE ARISING FROM THE OS PLANUM, and extending its fibres over the surface just mentioned; this muscle was first discovered by my much esteemed

* Osservazioni Storico-anatomiche intorno alla pretesa scoperta di un musculo, e di due nervi nell, occhio umano. G. Flagani, Roma, 1823.

NEY horti Regii Parisiensis, Anatomiæ et Chirurgiæ demonstrator publicus, modo dicti viri celeberrimi patruelis, dilectissimus præceptor meus primum invenit, et mihi pluries in variis subjectis demonstravit. Ex data hac partium structura et functione luculenter patet, pulsas ad aperta ostia ductuum lacrymalium, lacrymas iisdem adminiculis in exiles hosce ductus ferri, indeque proprio illarum motu, per declive iter tandem ad utrumque narium cavum delabi.

Hanc lacrymarum protrusionem, impulsionem ulteriorem progressum juvant 1mo. musculi orbicularis contractio. 2do. Palpebrarum frequentes motus. 3tio. Alterna osculorum constrictio et dilatatio. 4to. Ductuum propria elasticitas situs et directio. 5to. Tendo musculi orbicularis sacci ampliorem superioremve partem premendo lacrymas sua tensione ulterius protrudens. 6to. SIMILIS ACTIO MUSCULI PROPRII SACCO LACRYMALI INSERTI, nondum ab authoribus descripti. 7mo. Declivis sacci situs. 8vo. Via a nullo ambiente corpore impedita, proprioque osseo canali defensa, libera, summeque declivis."

Haller. Disp. Chir. Selectæ. Lausannæ, 4to 1755.

preceptor and cousin, DUVERNEY, that excellent anatomist and surgeon, who was public demonstrator of operative surgery and anatomy to the royal garden of Paris, and who showed it to me frequently in various subjects. From the structure and function of the parts, it clearly appears that the tears driven to the open mouths of the lacrymal ducts are, by these little assistants, conveyed into the delicate tubes, and thence by their peculiar motion, at length glide through the sloping passage into the cavities of the nostrils.

The impulsion, protrusion, and ulterior progress of the tears are aided, 1st. by the contraction of the orbicular muscle. 2d. By the frequent motions of the lids. 3d. By the alternate constriction and dilatation of the puncta. 4th. By the natural elasticity, situation, and direction of the ducts. 5th. The tendon of the orbicular muscle pressing on the upper and larger part of the sac, by its tension protrudes the tears farther. 6th. THE SIMILAR ACTION OF THE PROPER MUSCLE INSERTED INTO THE LACRYMAL SAC, not hitherto described by authors. 7th. The sloping situation of the sac. 8th. The course not being obstructed by any incumbent body, and the bony canal being defended, free and particularly slanting.

HALLER.

"Finis (Sacculi Lacrymalis) imus ad musculum obliquum inferiorem pertingit. CUJUS ALIQUAS FIBRAS VIDI SACCO MANIFESTE INSERI; PROPRIUM MUSCULUM alii habent. (*Duverney, Schobinger.*)

Physiologia, Tom. 3.

HALLER.

The lower end of the lacrymal sac reaches to the inferior oblique muscle; SOME OF WHOSE FIBRES I HAVE SEEN MANIFESTLY INSERTED INTO THE SAC. This, by some authors (Duverney and Schobinger) is esteemed a PECULIAR MUSCLE.

Haller's Physiology, vol. 3.

CLOQUET.

En arrière ce tendon (du muscle orbiculaire) adhère intimement a un aponevrose mince qui recouvre le sac lacrymal QUI DONNE NAISSANCE A QUELQUES FIBRES CHARNUES, et qui on a autrefois appellée *tendon réflechi* du muscle orbiculaire des paupières.

Anatomie Descriptive. Tom. 1.

CLOQUET.

The back part of the tendon of the orbicular muscle closely adheres to a thin aponeurosis covering the lacrymal sac, WHICH GIVES RISE TO SOME FLESHY FIBRES, and has been heretofore called *reflected tendon* of the orbicular muscle of the lids.

Descriptive Anatomy, vol. 1.

The minute anatomy of the *Ear* has engaged the attention of Dr. RIBES.* In some of his dissections, he had found the lining membrane of the labyrinth of the ear to be moistened with a fluid of a clear and watery appearance. This fluid, although

* *Revue Medicale*, December, 1823.

generally existing in such small quantity as merely to lubricate the inside of the labyrinth, is often more considerable, but still not sufficient to fill the cavities. From having observed that the quantity varied, he was induced to examine to what extent this peculiar fluid occupies the cavities of the labyrinth.

In dissections of persons who had been deaf, he found that the humour contained within the labyrinth was sometimes of a yellowish colour, sometimes of a red and bloody tinge. In the fœtus, the fluid was always bloody in appearance, and occupied all the extent of the cavities. At a later period, it was found more transparent, and less in quantity.

In accounting for a serous fluid being secreted by the membranes of the labyrinth, he supposes it to be analogous to that which is often found in the ventricles of the brain, in the pericardium, the pleura, peritoneum, and joints; and he supposes it to increase in quantity after death.

He dissected the ears of oxen and horses recently slaughtered, to estimate the quantity of fluid within the labyrinth, and repeated the experiment of COTUNNUS, of freezing the ear. He always found fluid, but also a considerable space which was empty. Hence he concluded that there must be air in this space; but how, he asks, does that get admitted, since there is no natural communication with the external atmosphere? He does not solve this difficulty. To discover whether there really be air within the labyrinth, he made some rather clumsy experiments: for example, he put the head of a subject in a basin of water, and fixed it with iron rods; he then introduced a pair of forceps into the ear, and drew away the stapes, at the same time perforating the foramen rotundum; he afterwards poured mercury into the canals. In some of his experiments, air was expelled; and hence he thinks he has proved that air exists in the labyrinth, although he admits that part of it may have been generated after death. He concludes that the internal membrane of the labyrinth is lubricated with a thin fluid, and that an aëriform fluid occupies the rest of its cavities.

The next question he investigates is concerning the manner in which this fluid escapes from the vestibule and cochlea. He had at one time paid great attention to the relative situation of the aqueducts, through which the fluid contained in the labyrinth was supposed to be drained off; but it had not occurred to him, till lately, that this fluid, like the fluids of other cavities, might be absorbed, instead of passing through the pores of the bone. This idea he formed from having observed that, in apoplectic patients, these supposed aqueducts were loaded with blood-vessels. Hence he was led to make injections, and to trace the courses of these aqueducts, by which he found that they were for giving passage to arteries and veins: neverthe-

less, he still persists in calling them *aqueducts*, and describes their course as such with great minuteness, "winding sometimes round the vestibule and cochlea, and sometimes giving subdivisions which lead into the cavities." After all, he comes to the conclusion which our anatomists had long ago formed,—viz. that these were not aqueducts, but the canals for the passage of vessels. The imperfect knowledge which some of the French possess of minute anatomy, is shown by M. Ribes not being aware that, in describing these openings as being larger in the fœtus than in the adult, he is making only a common observation upon the difference of the cancellated structure of the bone at the several periods of life. We may add, that all he has been labouring to show,—viz. that the passages described by Cotunnus were for the transmission of vessels for the supply of the bone, and the parts of the organ of hearing contained within it, was maintained by BRUGNON, in a paper published in the Transactions of the Royal Society of Turin in 1805.

It is remarkable that M. Ribes never once hints at the labours of Dr. MONRO or SCARPA, nor makes mention of their finished engravings made for dissections. Both of these anatomists describe the vestibule, the semicircular canals, and the cochlea, as being almost completely filled with a thickish fluid, on which the pulp of the nerve is distributed.

If M. Ribes believes that air is better adapted for propagating vibration than fluid, he should have discovered within the vestibule some provision similar to the Eustachian tube in the tympanum. But he appears to have forgotten, or to be ignorant of, the most important laws of accoustics. It is also curious that he never once refers to the nerves of hearing as occupying part of the cavities of the labyrinth.

Dr. WEBER who formerly published a Memoir on the Mutual Relation between the Development of the Head and the Pelvis,* has lately added some additional remarks to what he had formerly said upon the subject. According to his views, the various forms of the head, which are pointed out as characterizing different varieties of mankind, are to be found among all nations,—one or other being more or less common among particular races. The principal forms of the head, according to Weber, are the natural, the round, the pyramidal, the oblique, and the square. The same division holds good with regard to the pelvis, that being considered as the natural which is most regular and most generally found. He asserts that the pelvis always presents the same characters with the head, and this not only in the same nation, but in each individual taken separately, whatever may be the sex, age, or the diseases which may have in-

* *Journal für Chirurgie und Augenheilkunde.*

fluenced the conformation of the skeleton: in short, in any individual who has, for example, an oblique head, the pelvis will be found equally oblique; and the same relation will be found to exist between their size and proportions. The cranium corresponds to the great, and the face to the small basin of the pelvis, so that certain lines of these two parts are always in a definite proportion to certain lines of the other. Thus, the width of the head between the cheek bones corresponds to the upper diameter of the small pelvis; and the distance of the nose from the extremity of the chin corresponds to the length of the symphysis pubis. According to this doctrine, as the proportions of the head can easily be ascertained in the living subject, so from them those of the pelvis can be determined; and hence likewise the exact disposition of the uterus, and even the position of the head of the fœtus.—An example is given of a man, forty-one years of age, in whom both the head and pelvis were oblique, being twisted from right to left, in consequence of rickets.*

M. Geoffroy St. Hilaire has remarked, that the generative system of the Ornithorhynchus comprehends the two systems proper to birds and the mammalia; and this examination led him to discover the nature and arrangement of the three passages which serve, in birds, for the abdominal discharges. In the Memoir before us,† the author first makes some general remarks on the sexual system of birds, showing that in these animals the pelvis is widely open in front, turned backwards, and extending beyond the sacral vertebræ, which it embraces; so that the intestinal canal, being deprived of the situation it has in the mammiferous animals, terminates in the fundus of the urinary bladder. Having pointed out the causes which influence the relative position of the organs, he proceeds to distinguish the parts which have been confounded under the general name of *cloaca*. He calls the space comprehended between the two sphincters of the rectum the "rectal vestibule." In some, as the Ichneumon, or Egyptian rat, this interval is considerable; in other animals the two sphincters are blended; but, in the greater number of the mammalia, this space is formed by two anuses widely separated from each other,—one internal and the other external. In the ostrich, in particular, this vestibule is extremely distinct; but in other birds, as hens and canaries, the vestibule and the bladder form one common pouch of great size, in which is found a narrow cylindrical compartment, where the vasa deferentia in the male, and ovarian ducts in the female, end on either side. This canal, being distinctly perceptible in all

* *Ein neuer Beitrag zur Lehre von der Conformitat des Kopfs und Beckens.* —(Nova Acta Acad. Cæs. Car. Leop. Nat. Cur. 1823.)

† *Considerations generales sur les Organes Sexuelles des Animaux, a grande Respiration et Circulation.*—Memoires du Mus. d'Histoire Nat. 5 cahier.

animals, is called by M. Geoffroy the "uretro-sexual canal." Another compartment in birds is called by him the "purse of the prepuce," and this is the last of the pouches. Proceeding, therefore, from without inwards, we have the pouch of the prepuce, the uretro-sexual canal, the urinary bladder, and the rectal vestibule, the whole of which collectively constitute what has received the common name of cloaca; each of these has its correspondent part in all the mammalia. Under the name of "accessory bag," M. Geoffroy describes a superadded bag, which opens into the purse of the prepuce above, and at the root of the glands of Cowper, serving as their excretory duct.

In the subsequent part of his Memoir, the author proceeds to consider the generative system of other animals; and concludes by remarking, that the application of certain rules always brings us to a sort of imaginary type, to which all the varieties of form and modifications of organization may be referred; this theory being the leading principle which directs the zoological pursuits of this distinguished naturalist.

Professor JACOBSON, whose interesting discoveries with regard to the veins we formerly had occasion to notice, has lately devoted his attention to the anatomy of the supra-renal capsules,* which he has found in all the quadrupeds and birds he has examined, while he has observed them in but very few reptiles; neither has any thing analogous been detected by him in fishes, with very few exceptions (*raies et squales*). In birds, these supra-renal glands have two sets of veins,—one which carries blood to them, and another by which it is again removed, in the same way as takes place in the kidneys of these animals. He conjectures that a similar organization may exist in the fœtus of the quadruped at an early period of its existence, and that the supra-renal capsule may undergo some peculiar change, or be arrested in its development.

Some works of value have been published on anatomical subjects, tending to facilitate the study by improved arrangements and comprehensive views: among these, the "Elements" of M. BECLARD deserve to be noticed here.† BICHAT conferred an invaluable obligation on medical science when he directed the attention of its cultivators to the minute structure of individual textures. Gifted with extraordinary talents and an enthusiastic devotion to his profession, he studied every tissue and every organ, and may in fact be said to have created this branch of anatomy; for MALACARNE, who perhaps first esta-

* *Oversigt over det* K. D. *Vid. Selskabs forhandlinger*, 1823.

† *Elemens d'Anatomie General, ou Description de tous les Genres d'Organes qui composent le corps Humain.* Par P. A. BECLARD D'ANGERS, Professeur d'Anatomie à la Faculté de Medicine de Paris.—Paris, 1823.

blished a distinction between different kinds of systems of organs, did comparatively little with regard to their minute structure. Much, however, as we owe to Bichat, his work, it must be confessed, has been left far behind in the progress of modern science; while the enthusiasm of his character led him to the adoption of numerous erroneous opinions, which nevertheless are supported by such a specious, and often eloquent, train of reasoning, as to render them dangerous. Now the object of M. Beclard is to supply the deficiencies of Bichat, and to rectify his errors; presenting us, in short, with an accurate view of the present state of this branch of anatomy.

In an introduction of some length, the author gives a general outline of comparative anatomy and physiology, particularly with reference to those animals whose organization most resembles that of man. The general structure of the human body is minutely considered, and more attention given to the history of the fluids than is customary in anatomical works, while the description of each tissue is followed by an account of its pathology. There is likewise a chapter on accidental productions,—such as adventitious fluids, concretions, and tissues; and foreign bodies having life, as intestinal worms and parasitic animals. The work is written in a very compressed style, and contains in one volume a distinct account of many important subjects.

A very elaborate dissertation* has been published by Dr. Treviranus, of Bremen, on the differences between the form, shape, and situation of the various parts of the *brain* in different classes of animals. To this we must refer any of our readers who may be interested in the subject, as it is impossible to give any connected view of the author's minute descriptions, without extracts far more lengthy than our limits admit of.

The *surgical anatomy of the arteries* has been made the subject of a distinct work by Mr. Harrison, of Dublin,† in which the descriptions are interwoven with practical and physiological remarks. All the arterial branches, of any importance in a practical point of view, are described, with reference to their coverings, the parts they lie upon, and those which they accompany; while the very minute and superficial ramifications are disregarded. This method seems to us judicious, as it relieves the memory from an unnecessary load; and the work itself would probably have been an useful addition to the dissecting-

* *Sur les Differences qui existent relativement a la Forme et a la Situation des Parties du Cerveau, dans les diverses Classes du Regne Animal.* Par le Docteur G. R. Treviranus, Professeur a Breme.—Journal Complementaire, Mai 1824.

† *The Surgical Anatomy of the Arteries of the Human Body, designed for the Use of Students in the Dissecting-room.* By Robert Harrison, A.B. T.C.D. &c. —Dublin, 1824.

room, had there not already been so many excellent Manuals of this kind.

We have likewise to notice a translation of the General Anatomy of BICHAT, of which only the first part (including two volumes) has yet appeared;* and an Introduction to Anatomy and Physiology, by Mr. SANDWITH, in which the descriptions are adapted to the general reader, and the plan of which approaches more to the anatomical part of PALEY's Natural Theology than any other work with which we are acquainted.†

In the department of PHYSIOLOGY, we find little on which to congratulate ourselves. It would be unreasonable, indeed, to expect that each short period which intervenes between these Historical Retrospects should give birth to any brilliant discovery; but what we lament is, to perceive the danger which physiology at present runs of being brought into utter disrepute, from the manner in which it is cultivated by our continental neighbours, who seem unable to discover that the multiplication of experiments, without some rational object, can never contribute to the advancement of science. Too many of these which we find recorded in the foreign Journals relate to matters of mere curiosity, while others concern facts which we know sufficiently well without any fresh illustration. But the French will not believe that we see with our eyes, or hear with our ears, unless it be proved by experiment. Thus a rage for experiments is the prevailing mania, and every youth who would acquire a name gets him a supply of dogs, cats, rabbits, and guinea pigs, in order to ascertain—no matter what. "Voici un chien, qu'est ce qu'il faut faire." Accident or the whim of the moment seems often to dictate the particular cruelty to which the animal is to be subjected, and the *experiments* are forthwith detailed with all possible minuteness of description, and all the affectation of scientific precision. The next step towards becoming a physiologist of repute is to lay this account before the Institute, a committee of which is appointed to report upon it, and accordingly do report, that it is very clever and very learned; that the author is an ornament to science and an honour to France. Those who are acquainted with the aspect which experimental physiology has lately assumed in that country, will be sensible that this picture is not too highly coloured: indeed, it is quite extraordinary to see with what facility the approba-

* *General Anatomy, applied to Physiology and the Practice of Medicine, by* X. BICHAT. *Translated from the last French edition, by* CONSTANT COFFYN. *Revised and corrected by* GEORGE CALVERT, Esq. &c.—London, 1824.*

† *An Introduction to Anatomy and Physiology, for the Use of Medical Students,* &c. By THOMAS SANDWITH, Surgeon.—London, 1824.

* A Translation of the whole of Bichat's General Anatomy and Beclard's additions have been published in Boston nearly three years ago, by Dr. Hayward.

tion of various learned bodies in Paris has recently been bestowed upon dissertations the most directly contradictory of each other. We beg not to be misunderstood: it is not to well-directed experiments, instituted to ascertain important objects, that we object, but only to such as we have above alluded to.

Since our last Historical Retrospect, we find many new volunteers in the ranks of those who have devoted their attention to the nervous system, prosecuting and extending the experiments on different portions of the brain, after the manner particularly practised by ROLANDO in 1809, and recently revived in France by M. FLOURENS; an account of whose investigations has been given in the preceding volumes of this Journal. One of these gentlemen seems to have surpassed the others in the refinement of his speculations: we allude to M. BAILLY; and, in giving a sketch of his views, they may be taken as a general illustration of the manner in which the subject is at present cultivated.

The principal results of his Essay are certain anatomical facts and general conclusions therefrom, relative to the organization and functions of the nervous system. Among the former we find a particular account of the tubercula quadrigemina in fishes. These organs, which have hitherto been regarded as belonging to one individual function, are composed of two systems entirely distinct from each other in the direction of their fibres, in their relation to the neighbouring parts, in their distribution, their commissures, and functions. One of these systems is formed by transverse fibres, originating in general from the striated body, which is itself the termination of one of the bands of the spinal cord. These fibres pursue their course upwards and inwards, and all meet on the median line with those of the opposite side, where they communicate by means of other transverse bands, constituting commissures. The other system is external to the preceding, and formed of the fibres of the optic nerve, which dilate into a nervous band, covering the inner part described above. The fibres of this external plate are in general longitudinally oblique. In order to attain their destination, they run downwards, crossing the fibres of the internal band, and go to form the optic nerve. The commissure of this part is found, in the greater number of animals, behind the optic nerve, beneath which it is sometimes hid. M. Bailly first discovered it in the buffalo, and afterwards in various others. This commissure runs in the inferior class to the posterior part of the tubercula quadrigemina, of which it constitutes in some sort the external and posterior margin: it belongs only to the external, and in no degree to the internal tubercle, which, as already mentioned, has its own peculiar commissure. Thus each tubercle has its commissure, that of the internal being

above, and that of the external being situated below. This commissure has served the author with the means of determining the use of a nervous fasciculus, which, although pointed out by various writers, had never been referred to any particular system,—that, namely, which goes from the posterior portion of the tubercula quadrigemina to the corpus geniculatum externum. This, according to M. Bailly, is the termination of the commissure of the optic nerves in the mammalia, and the following are the grounds on which this opinion is founded:—

The tubercula quadrigemina being simple in the inferior classes,—that is, only consisting of one lobe on either side,—are subdivided into many parts, which in the mammalia have received different names: thus the anterior and posterior tubercula quadrigemina, the corpus geniculatum, both external and internal, are only portions of the optic lobe of inferior animals. The commissure of the fibres of the optic nerve, which runs to the posterior part of this lobe in the inferior classes, is visible in the whole of its extent; but, in mammiferous animals, one portion of these optic lobes is situated precisely on the course of this commissure,—viz. the corpus geniculatum externum. The commissure in question is thus interrupted but in appearance only, for it is continued underneath, and at length ends in the fascicules above mentioned, which runs from the posterior part of the tubercles to the corpus geniculatum. Now, as in the inferior classes of animals, the commissure of the optic nerves goes to the posterior part of the tubercula quadrigemina,—and as, in the mammalia, it runs to the posterior tubercle,—we have, in this distribution, a new proof that the posterior corpus quadrigeminum is the same organ as the anterior, from which it is only accidentally separated by a furrow, which is not to be found in the inferior animals.

M. Bailly next shows the singular connexion between the olfactory and optic nerves: the former one covered by the hemispheres of the brain, the ventricle of which is, in some measure, a continuation of the cavity of these nerves; the latter, instead of being covered, do themselves cover the expansions analogous to the hemispheres; for he considers the internal division of the tubercula quadrigemina in this light. Another proof of resemblance consists in the presence of a commissure, which these two nerves possess.

The anterior commissure has been described as simple, going to the middle lobes in man, and to the olfactory nerves in other animals. M. Bailly has discovered that a distinction exists between the herbivorous and carnivorous animals; for, in the latter, this commissure is double, one part going to the middle lobes, and the other to the olfactory nerves. The fifth pair has never been described as possessing a commissure: M.

Bailly, however, has found one in the lamna (*lamna cornubica*), and has likewise described a particular conformation of the anterior lobes of the hemispheres in birds, and probably applicable to other animals. These convolutions, being independent of the pyramidal eminences which cross each other at the summit, cannot afford the same phenomenon of impressions communicated to the opposite side.

M. Bailly is of opinion that the vertebral canal contains not only the origin of nerves of sensation and motion, but likewise that there are in it organs analogous to the hemispheres, and which are the seat of volition. He lays down the following propositions:—1. Every segment, every ring, every vertebra, of an animal, contains the same nervous elements throughout the whole length of the animal. 2. In all the vertebræ of the neck and back, there are nerves of sensation, motion, and digestion; and an intellectual system besides, to receive the impressions of these nerves, in order to produce consequent determinations.

In the head, this intellectual system is constituted by the brain. In the vertebral canal, it is imagined by M. Bailly to be composed of *eight* longitudinal cords, which are described by him, and which terminate anteriorly, each having a distinct development. Thus the inferior median cord, which is continuous with the pyramidal eminence, terminates anteriorly in the hemispheres of the brain. The inferior lateral cord terminates in the internal fold of the tubercula quadrigemina; so that, according to M. Bailly, it is a new organ of intellect, and not one of sensation. The superior lateral cord terminates in the cerebellum. The superior median cord terminates in the lateral parts of the medulla oblongata. This last organ, of which the greatest development takes place in cartilaginous fishes, is recognised by the author as analogous to the cineritious folds existing in the mammalia. Thus, the hemispheres of the brain, the internal fold of the tubercula quadrigemina, the cerebellum, and the lateral convolutions of the medulla, are organs analogous as to their intellectual functions, and must necessarily be exercised in the eight longitudinal cords of the spinal marrow, which are continuations from them.

The swellings which the spinal marrow presents in different points of its length are not participated by the intellectual cords. The spinal nerves have two origins, which embrace the intellectual cords between them. The same disposition occurs in the nerves of the head, which only differ from the other in the superficial changes produced by the development of the intellectual cords of the head. The author shows that the anatomy of the human body, having preceded that of other animals, has thus influenced the names given to different parts, by which, different names have been given to the different roots of the same nerve: thus the third and fourth pairs, in man, issue from

the head separately, but in the inferior classes of animals only constitute one pair. So that, if we are to consider as distinct those nerves whose roots do not issue by the same foramen, we ought to regard each vertebral pair as composed of two different nerves, since, in some cartilaginous fishes, each fascicules of the anterior origin issues by a different hole from those of the posterior.

Each vertebral pair of nerves communicates externally with a ganglion of the great sympathetic. M. Bailly has found the same correspondence between the cerebral nerves and other ganglia, such as the ophthalmic, the spheno-palatin, naso-palatin, &c., which are to the cerebral nerves what the ganglions of the great sympathetic are to those of the spine. Each vertebral pair furnishes nerves of respiration, or communicates with them. The same disposition obtains with respect to the cerebral pairs. The author considers the fourth and sixth pairs as nerves of respiration of the eye. Each vertebral pair is connected, by one of its extremities, with the intellectual system: the same with regard to the cerebral nerves.

Radiated animals have been considered as formed on a different plan from the articulated or vertebrated; the author, however, finds the same radiated disposition in the spinal marrow, which, composed of eight cords circularly disposed, exactly resembles the ganglionic circle of polypi, &c. In these animals the ganglions have a globular form, while in the vertebrated animals they are elongated into cords; the difference being in their form, and not in their nature.

Some experiments upon turtles tend to confirm the opinion that the author has advanced on the functions of the longitudinal cords of the spinal marrow, which he has designated by the name of *intellectual*, to express their analogy with those of the brain. He asserts that experiments agree with anatomy in pointing out that these cords partake with the brain the privilege of being the seat of volition and determination, and having the power to command the movements of consciousness and intention; a property which heretofore has been regarded as belonging exclusively to the brain.*

Dr. Bellingeri, of Turin, lately read to the Royal Society of that city, a Memoir on the *functions of certain nerves, particularly those of the spine.*† His experiments were performed on sheep and horses, and the following are the most important results. The posterior roots of the lumbar and sacral nerves communicate the power of extension to the inferior extremities in quadrupeds; the anterior roots of the same nerves, on the

* *Bulletin des Sciences Medicales.*

† *Annali Universali di Medicina*, 1824.

contrary, only give rise to the movements of flexion; the posterior roots alone preside over the sense of touch; the white substance of the spinal cord, the nervous filaments arising therefrom, are destined for movement; the grey matter, on the contrary, and the nerves arising from it, are the organs of touch.

Baron LARREY has likewise given some share of his attention to the nerves, although in a very different way from the professed experimentalists. The observations of this veteran surgeon have been principally made on the human body, during surgical operations undertaken in consequence of wounds received in battle; and any facts thus indirectly ascertained are, at least, as valuable as those brought together by the express institution of experiments. He has frequently observed* that the division of the nerves of the brain causes acute, but momentary, pain; that the cut extremities, instead of retracting, seem rather to become a little elongated, and to touch each other; whilst all the other soft parts, when recently divided, retract and separate from each other with more or less force; that the cut ends of nerves swell, or bulge out, to a certain distance, and form at their summit a rounded unequal eminence, from whence arise very slender filaments, (doubtless formed by the neurilema,) which unite with the surrounding parts, and lose themselves in the cicatrices, which become very sensible. When these nervous extremities are exposed to the contact of the atmosphere, they inflame, and become covered with fleshy granulations formed by the vessels of the neurilema; and the parts thus inflamed are extremely sensible and painful, so that they cannot be touched without exciting convulsions. When the two extremities of a divided nerve are reunited by spontaneous cicatrization, the nerve, as is well known, again transmits the stimulus necessary to restore the functions of the part to which it is distributed. According to Mr. Larrey, this communication is not effected by means of any anastomosis, but each nervous filament which enters into the formation of a nerve fulfils a certain specific function, which cannot be supplied by any other; thus resembling the metallic wires which form the common cord of the electrical telegraph of SŒMMERING.

These statements, however, are not peculiar to M. Larrey; but a circumstance follows which we believe is not generally known,—it is that two distinct nerves, which have been divided during an amputation, may unite together in the stump end to end. He amputated the right arm of a soldier, named Glass, in 1821, for scrofulous ulcers and caries of the bones of the fore-arm. The patient died in the summer of 1823, of tuber-

* *Notice sur quelques Phenomenes observés dans la Lesion des Nerfs, et dans leur Cicatrization.* Par M. le BARON LARREY.—(Revue Medicale, Mars.)

cular phthisis; and, on examining the stump, it was found that the cicatrix, which had become linear, was depressed in the centre, and appeared to have formed vascular connexions with all the subjacent parts, including the periosteum of the bone. This external envelope having been removed by careful dissection, it was found that the cut end of the bone was become thin and rounded, the medullary cavity being almost obliterated; the humeral artery and vein were united at their extremity, and their cavity destroyed to the extent of some lines. The trunks of the median and external cutaneous nerves were united end to end by their divided extremities; and an incision made through the cicatrix afforded no trace of intervening cellular texture, the substance of the two nerves appearing to be blended together, like natural anastomoses formed by the sides of certain nervous trunks which have separate destinations. The two trunks of the brachial plexus, which runs to the posterior part of the arm and fore-arm, were united in a similar manner.

A case of *inflammation of the spinal marrow, connected with disease of the kidneys*, related by Dr. JONES, possesses some interest from its relation to the recent experiments on the functions of the anterior and posterior roots of the spinal nerves. The power of moving the limbs was but little affected, but there was considerable numbness and loss of sensation, affecting the back especially. "Now the examination of the spinal cord showed that, though the sheath, and the cellular substance between it and the inside of the vertebræ, was most inflamed at its anterior part, the enlarged blood-vessels exercised most pressure at the posterior and lateral parts."* It is almost unnecessary to remark, that this account, so far as it goes, is corroborative of the doctrines of Mr. CHARLES BELL and MAGENDIE.

In our last Proëmium, we mentioned the observations made by M. DESMOULINS on the peculiarities of the brain in fishes: we have now to lay before our readers some furthur researches, by the same physiologist, on *the organs of vision* in different classes of animals.† Careful dissection has given M. Desmoulins occasion to remark a folding of the optic nerve, and of the retina itself, in eight different species of fish, and that those possessed of this arrangement are gifted with more energetic vision than the others. From this disposition of the retina it follows that, when unfolded, it occupies a much larger extent than the membrane which envelops it. Further researches, made on those

* *Case of Inflammation of the Spinal Cord, combined with Inflammation and Suppuration of the Right Kidney; with the Appearances after Death.* By WILLIAM JONES, M. D. &c.—(Edinburgh Med. and Surg. Journal, April, 1824.)

† *Memoir sur le Rapport qu'a l'etendue des Surfaces de la Retine et du Nerf Optique des Viseaux avec l'Energie et la Portée de leur Vue.* Par M. A. DESMOULINS, D. M. P.—(Journal de Physiologie Exper.)

birds whose sight is most piercing, confirm the results already mentioned, and convert them into a general law. In some of the eagle and vulture species, the retina is folded on itself in such a way as to resemble the meridian lines of a sphere; the folds being deeper and more distinct in the eagle than in the vulture. In these birds, and in some others, the optic nerve is surrounded by a fibrous sheath, which does not adhere to it, but is continuous with the sclerotic coat and the dura mater. In the curlew there is a slight puckering, by which an increase of surface is gained, equal to the tenth of the whole sphere. In the diver (*colymbus minor*) the optic nerves are not longer than the fourth-part of the diameter of the eye; the retina is smooth throughout the posterior fourth of the sphere, and very much puckered throughout the rest of it; so that, if unfolded, it would occupy double the extent of the spherical segment where they are situated. In the mallard, the turkey, and some others, the retina is smooth as in man. It does not appear, then, that the folding of the optic nerve necessarily coincides with that of the retina.

After demonstrating that there is a constant coincidence between the energy of vision and the proportional extent of surface in the retina and optic nerve, the author shows that this anatomical disposition has a constant relation to the size of the tubercula quadrigemina, in birds and fishes. M. Flourens considers this portion of the brain as merely the conductor of vision, the cerebral lobe being the boundary of sensation and the site of its perception. On the other hand, according to M. Desmoulins, in those animals in which the cerebral lobes are either wanting, or of which a rudiment only exists, the brain is not the seat of the sensation; and thus, in fishes, he regards the optic lobe, or tubercula quadrigemina, as the seat of vision. He likewise impugns the accuracy of Flourens on another point, —viz. in holding the cerebellum to be the balancer and regulator of determinate movements, as this function exists in animals destitute of the organ in question (*les batraciens*). Cuvier says that, in these animals, it is only a small triangular body. Now, M. Flourens talks in his Memoir of having removed *both lobes*; which is regarded as a proof that he mistook the part.

Some important observations have likewise been made by M. Desmoulins with regard to *the coloured and reflecting surfaces of the choroid, and the corresponding degrees of perfection in vision.* In cats and some other mammalia, in the sturgeon and various fishes, the whole concavity of the choroid is uniformly covered of a pearly white, with metallic reflections, which in some species are not inferior in lustre to polished silver. In some (*squales*), a zone of the choroid, touching the iris, is black; but its situation is such as to prevent it from receiving any

image or ray of light. Thus it appears that, in various mammiferous animals, and in certain fishes, there is not the smallest black spot on the posterior part of the eye; and that in the sturgeon, and some others, the inner surface of the iris reflects the rays of light. On the other hand, in the hedgehog and the owl, both nocturnal animals, the concavity of the choroid is either black or brown. Those animals which have the choroid coloured generally have the pupil placed longitudinally, of which no example is to be found where the choroid is black or brown: neither does M. Desmoulins suppose that any animal, really a nyctalope, has the choroid black. In short, the idea of this physiologist is, that the coloured choroid acts by reflecting the rays in such a manner as to produce a double image; thus resembling the effect of the folds existing in birds, although the multiplication takes place to a much less extent, and depends upon a mechanism entirely different. In the sturgeon, the two contrivances (of a reflecting and folded choroid) are united at the inferior extremity of the eye.

Dr. EDWARDS, who has become naturalized in France, and whose name we have frequently had occasion to mention with respect, has lately published an extensive work upon *the influence of physical agents upon animal bodies*, by which appellation he designates the air, water, temperature, light, and electricity.* Those causes, in some of their modifications, exert a silent but constant agency, and the method adopted to measure the effects thus produced was that of experiment upon each of the four classes of vertebrated animals.—Among these physical agents, the atmosphere is most universal in its operation, and most important in its effects; yet there appears reason to believe that, much as the phenomena connected with it have been studied, from the time of GOODWIN to the present day, too great importance has been attached to the relation subsisting between the atmosphere and the lungs, or, rather, this alone has been studied, while the effects resulting from the influence of the medium in which an animal is placed upon the surface of the body, has until lately been nearly overlooked. In some classes of animals, indeed, the influence of this agency is acknowledged; but its existence does not seem to be confined to those modifications of life which prevail in the species which constitute the lower ranks of creation,—at least, if we admit the theory of M. GEOFFROY respecting the respiration of the fœtus. The influence of the medium, independently of respiration, was ascertained by Dr. Edwards, by an ingenious application of the wonderful property possessed by reptiles of retaining the free exercise of sense

* *De l'Influence des Agens Physiques sur la Vie.* Par W. F. EDWARDS, D.M &c. &c.—Paris, 1824.

and voluntary motion for a certain period after the excision of the heart. By this operation, the circulation is arrested, and the function of respiration ceases, as a necessary consequence. The result of this is to leave only the nervous and muscular systems in operation. If, when this has been done, some animals be placed in air, and others in water, the difference between the period during which life is prolonged under these two circumstances will indicate the respective influence of the media upon the nervous and muscular systems, *independently of respiration and circulation.*

Such was the plan adopted by Dr. Edwards. He cut out the hearts of four salamanders, two of which were exposed to the air, and two placed in water, which had been freed from air by boiling: for a short time they were all equally lively, but their activity gradually diminished, and was only manifested at long intervals. At the end of four or five hours, those in the water appeared to be dead, but they still moved on being pinched: one died at the end of eight, and the other of nine hours. Those which had been left in the air, on the contrary, lived twenty-four and twenty-six hours. These experiments were frequently repeated, as well on salamanders as on frogs, and with similar results, except that, in these latter animals, the period during which they survived in the air was not so much greater.

The difference in the effects of the media was further illustrated, by placing a frog, under the circumstances above mentioned, in water, and, when it no longer gave any sign of life, removing it into the air, by which it recovered and began to move. This experiment was likewise reversed.

Another modification of these experiments consisted in preventing respiration by tying pieces of bladder over the heads of frogs, so as to produce strangulation. They were paralyzed at first, but gradually recovered their strength to a certain extent, and lived from one to five days: while those immersed in water, under similar circumstances, died at the end of ten or twelve hours. It was further ascertained, by enclosing frogs, with the head thus enveloped, in vases of atmospheric air, that a portion of carbonic acid was formed, thus properly constituting cutaneous respiration. This had been previously ascertained by SPALLANZANI, but in a less satisfactory manner, as there were sources of error in his experiments, which it is unnecessary here to detail.

A very curious question has received conclusive elucidation from the investigations of Dr. Edwards: we allude to the singular fact of certain animals, particularly toads, remaining alive for indefinite periods, although enclosed in solid bodies. Most of our readers are probably aware of the famous experiment of

HERISSANT, who enclosed three toads in boxes sealed with plaster; two of which were found alive at the end of eighteen months. The account of this experiment is not very satisfactory in its details, as no mention is made either of the size or materials of the boxes employed; and there is reason to believe that a certain portion of air was present in them. Dr. Edwards, in order to guard against these objections, took boxes about four inches square, and, having put some plaster in the bottom, he placed the toads in them, and, surrounding them on all sides with plaster, shut and secured the boxes. The circumstance to be ascertained was—whether these reptiles, deprived of air by the contact of a solid body, or by immersion in water, would survive longest; and it is sufficient at present to remark, that they lived much longer in the plaster than in water. A fact sufficiently remarkable, but what appears more extraordinary still, is that they lived longer when enclosed in a solid body than in air. Four frogs were confined in a dry jug, and an equal number were placed in dry sand: the third day, all those confined in air were dead, except one, while all those enclosed in sand were alive, except one; from which it would appear, not merely that these reptiles can live when surrounded by solid bodies, but that placing them in this situation is a means of prolonging their existence; a conclusion which is in accordance with those well-authenticated narratives of animals of this class having been found in the centre of solid masses, where they must have been enclosed during periods concerning the duration of which it would be in vain for us to indulge in conjecture.

That the sand employed in the last-mentioned experiment contained air is obvious, and that the plaster was pervious to air was proved by the following experiment:—An open tube was corked with wet plaster to the extent of an inch; after it was dried, more plaster was applied, to cover any imperceptible apertures; the tube was then filled with mercury, and inverted over a vessel of the same: the air entered through the plaster, and made the quicksilver sink in the tube. But as it might be said that, although some air passed through the plaster, yet enough to sustain life could not be supposed to find its way through so dense a body, toads and salamanders were enclosed as before, and the boxes buried in water and quicksilver: they now died as soon as when merely immersed without any covering. It would thus appear that the fact of these reptiles living in solid bodies is not an exception to the general law, which regards air as necessary to the support of animal life. The fact of their surviving longer in plaster or sand than in air, seems to depend upon the waste by evaporation being thus lessened; it having been found, by statical experiments, that, *ceteris paribus*, a frog confined in air became emaciated and shrivelled with

much greater rapidity than when surrounded by solid materials; the rationale of which is too obvious to require explanation.

The influence of cutaneous respiration was further illustrated by preventing the action of the lungs. As the mouth of these animals is necessarily shut during respiration, to enable them to throw air into the lungs by a movement of deglutition, Dr. Edwards took advantage of this circumstance, by placing a piece of stick between the jaws, so as to prevent them from being closed, and retaining it in this situation by a particular apparatus. This contrivance impeded, but does not appear to have entirely arrested, the action of the lungs, and therefore the results can scarcely be regarded as satisfactory; nor the method, one proper to be adopted in repeating these experiments. A ligature was applied so as entirely to exclude the access of the air; the reptiles were placed on wet sand, and lived for a considerable time,—one of them for twenty days after complete strangulation, although, when similarly treated in water, they died in from one to three days; a result which is regarded as proving the beneficial influence of the air upon the skin. Yet another and a very important modification of this experiment consisted in the entire extirpation of the lungs, the peculiar construction of which in these animals renders it capable of being done without making an extensive wound: an incision of two or three lines in the flank permits of their extraction, while a ligature placed at their root prevents any effusion of blood. This operation was performed on three frogs, the external wounds being closed by sutures; they seemed to suffer little, and were soon as lively as before; two of them lived thirty-three days, and the other forty.

We have thought it proper to give these experiments a place in this compilation, not on account of their absolute novelty, but because they appear to us more precise than those of Spallanzani, or any previous experimentalist on this subject; and to place the importance of the skin as an organ of respiration in a very clear light, so far as regards the animals experimented upon. The work contains many interesting doctrines, particularly concerning the action of temperature and different media upon animals: almost all of these, however, were published in detached Essays, which have appeared in the French periodicals at various times during the last five or six years, and consequently the most important of them have already been noticed in this Journal.

M. Defermon has performed some experiments on different animals, with the intention of examining under what circumstances contraction of the spleen takes place, and what causes effect variations in its volume. It appears that certain substances, as strychnia, camphor, acetate of morphia, and others,

which affect the nervous system, produce contraction of the spleen. When strychnia, for example, is given to a dog, this organ, as soon as the poison is absorbed, becomes rolled up in a spiral form, and exhibits powerful contractions. If camphor be given, a different species of contraction takes place; the spleen, which is generally smooth, becoming rugose, presenting eminences which augment and diminish in volume, producing a degree of movement throughout the whole viscus. It is added, that, when the relation between the number of pulsations and respirations in the minute changes, the state of the spleen undergoes a corresponding alteration; that is, it increases or diminishes in size. Suspension of respiration likewise affects the degree of distention of the spleen. M. Defermon is engaged in the prosecution of these inquiries with a view to publication.*

One of the best of the few cases on record in which *the skin of the Negro has become white*, is related by Mr. Brown, in the Transactions of the Medical and Chirurgical Society of Edinburgh. The change went on gradually, but progressively, and at the end of eighteen months (the period to which the report extends,) the extremities and head were of a natural white appearance; the breast, abdomen, and back speckled; and the change making regular progress.

The most important work connected with physiology which has for some time appeared in this country, is the "Elementary System" of Dr. Bostock.† Independent of its intrinsic merits, it is further remarkable as the first regular Treatise on Physiology which has issued from the English press; a circumstance not a little extraordinary, when we reflect upon the active share which our countrymen have had in promoting the advancement of all the sciences connected with medicine. To supply this want has been the object of Dr. Bostock; and, in the work to which we allude, the student will find a concise but interesting account of the various theories and hypotheses which have at different times prevailed in the medical world, as well as an instructive view of the present state of our physiological knowledge. As, however, a work of this kind necessarily presents little which has not already appeared under different forms, we shall, on the present occasion, content ourselves with having thus briefly alluded to it.

MORBID ANATOMY AND PATHOLOGY.

As the anatomy of healthy structures seems naturally to pre-

* *Bulletin des Sciences Medicales*, Fevrier.

† *An Elementary System of Physiology.* By John Bostock, M. D. F. R. S. L. S. & H. S. M. R. S. Vol. I.—London, 1824.

cede Physiology, so Morbid Anatomy may with propriety be placed immediately before General Pathology.

A very curious example of what Dr. DUNCAN has denominated *bifid brain*, has been recorded by that gentleman in the Edinburgh Medico-Chirurgical Transactions;* and a circumstance which gives additional value to the description of this malformation is, that it comes from the pen of the late lamented Dr. GORDON. We have many inducements for transcribing the narrative into our pages, which, independent of its relating to a very rare species of deformity, may be regarded as a model for such reports; and to those of our readers who had the good fortune to be acquainted with Dr. Gordon, the case will be received with interest, as the posthumous production of one whose penetrating mind appeared well qualified to give a fresh impulse to the sciences he cultivated.

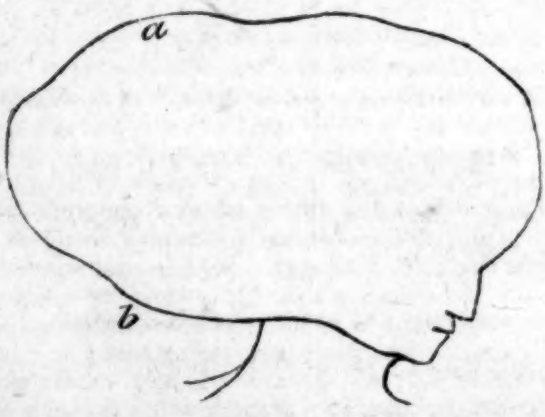
"The child, which forms the subject of this paper, was a female, born hydrocephalic, and which lived seven months. All the external senses and functions appeared to be natural; she was occasionally lively, and evidently received pleasure when any one played with her; but could never sit up, on account of the weight of her head. The day after her death, the body was examined by Dr. Gordon, in the presence of Dr. Duncan and various other gentlemen, and the following description of the appearances drawn up by him:

"*Notes of the Anatomy of the Head.*

"I. *Of the Parietes of the Cranium.*

"1. *Shape and Dimensions externally.*—I measured the head, I think, in May or June. It was 29 inches round by the frontal and occipital protuberances, and 16½ over the vertex from one ear to the other ear. I did not then take any outline of its shape.

"At the dissection, the form of the head was somewhat like this—



* *Case of Hydrocephalus, with Bifid Brain.* By ANDREW DUNCAN, jun. M.D. &c. &c. *With a Description of the Malformation,* by the late JOHN GORDON, M.D. F.R.S.E. &c.—(Transactions of the Medico-Chirurg. Society of Edinb.)

"The dimensions were 28½ inches in its greatest circumference, and less tense than before death.

"When the back part of the head, behind *a b*, was placed between the eye and the light, it was distinctly translucent.

"2. *Parts composing the Parietes.*—A. *The Integuments.*—Had a thin appearance, and were actually thinner than natural. Large ramifications of veins were very visible in the regions of the temples and occiput. There was no appearance of granular adipose substance under the cutis vera, such as is always to be seen in children of the same age in a state of health.

"B. *The Bones.*—Both halves of the frontal bone were fully a fifth larger than they are naturally at this age, and they were separated from each other, at the anterior superior fontanelle, fully an inch and a half; but they gradually approached each other below, so as at last to come in contact, in the usual manner, in the origin of the nasal process. Their structure and thickness were not different from the natural. Both parietal bones were between a fourth and a fifth larger than they are in a full-grown subject, and were as thick as in a child of six months, or rather more. Their margins were separated from each other, and from the frontal bone, about an inch and a half. The occipital part of the occipital bone, like the frontal, was about a fifth larger than it commonly is at this age, but was of the usual thickness and structure, and separated from the parietal bones by a space not less than three, but nearer four, inches. The squamous portions of the temporal bones, and the large wings of the sphenoid, were also larger than natural; and between their margins there were considerable intervals, and they were more indistinct outwards than natural. But the parts of the basis of the cranium, which occupy the median plane and its vicinity, were but little affected.

"3. *The Dura Mater.*—The whole inner surface of the cranium was lined, as usual, with dura mater. It adhered closely to the bones where they existed, and, where they were deficient, it was united to the inner surface of the integuments. It had the same thickness and structure as in health. Its falciform process was of the usual depth or breadth, but greatly longer. It stretched from the region of the frontal spine to the internal transverse ridge of the occipital bone, as usual, and there terminated in the tentorium cerebelli. The tentorium itself was very little enlarged or altered in its situation or appearance.

"II. *Of the Contents of the Cranium.*

"1. *The Water.*—This was drawn off by a puncture through the most prominent point of the occiput; a blowpipe being immediately introduced to facilitate its discharge. By this opening all the water was evacuated. The quantity was 136 ounces by weight. It had the transparency and want of colour which are so remarkable in this secretion, being exactly like the purest spring water.

"2. *The Brain and its Membranes.*—As soon as the whole water had been evacuated, an incision was made with a pair of scissors, first transversely on the left side, from the puncture between the occipital and parietal bones, for about two inches, and then, at right angles to

this, a little to the left of the median plane, from the puncture all the way forward to the brow.

"When the opening in the course of this incision had been made sufficiently large, we looked through it into the interior of the cranium, conceiving it possible that appearances might be advantageously seen in that stage of the dissection, which might afterwards become less distinct; and certainly the aspect of parts was very striking. The brain occupied the lower part of the cavity alone; the rest was entirely empty, excepting only that the falx projected down into it, but still separated from the brain (between the hemispheres of which it naturally penetrates) nearly two inches.

"The cavity being fully exposed, and the parts minutely examined, the following was the result:—Those surfaces of the two hemispheres of the *great brain*, or brain proper, which are usually applied to the falx of the dura mater, were separated from each other for about four inches, except within an inch of their anterior extremities, where they remained united in the natural manner. The corpus callosum was wholly wanting, except two white bands, which stretched across between the anterior horns of the ventricles, nearly parallel to each other, about a quarter of an inch apart, and each of them from an eighth to a quarter of an inch broad. We took these to be vestiges of this body. I endeavoured to produce a fibrous laceration in these bands, but their softness did not admit of it. The fornix had also almost entirely disappeared:—perhaps we ought to say, entirely; for there remained only a round white cord, of the diameter of a crow-quill, on the right side, which ran from the region of the anterior pillars of the fornix, closely tied, by means of the pia mater, to the lower surface of the convolution which usually overhangs the corpus callosum, backwards towards the commencement of the hippocampus, in the inferior horn of the right lateral ventricle, where it gradually disappeared. Yet this cord had been little analogous in its structure to nervous matter; it was firm and tough, and not easily torn. The septum lucidum was entirely gone. There was not the slightest appearance of the anterior commissure of the brain remaining. The folded layers of white nervous matter anterior to the pineal gland, commonly called the *posterior commissure*, were quite distinct, and both broader and thicker than usual. The ventricles were considerably enlarged; and, from the disappearance of the corpus callosum and fornix, they formed one common cavity with the parietes of the cranium, and a membrane afterwards to be described. Had they been quite shut up, they would perhaps have contained about ———* of the whole fluid found within the head. When the brain was first examined, it presented an appearance like that which anatomists daily produce, when they divide the corpus callosum and fornix longitudinally from behind forwards, and allow the hemispheres to separate from each other by their own weight. But, owing to the absence of the parts mentioned, the surface exposed was much more extensive in this case. Besides, the depth or breadth of that flat surface of each hemisphere, which in a healthy cerebrum is applied to the falx, and is bounded by the corpus

* Not filled up by Dr. Gordon.

callosum below, was in this instance a good deal diminished. This change had taken place to a considerably greater extent on the left than on the right side.

"Hardly any part of those convolutions and white nervous matter on which they rest, which form the median surface of the left posterior lobe, remained. The parts looked as if the inner wall of the posterior horn of the left lateral ventricle had been shaved away. In consequence of this, the surface of the inferior horn was freely exposed, and a full view might at once be obtained of the whole cornua of this ventricle. On the right side, although one could, from the absence of the posterior extremity of the corpus callosum and fornix, see almost down to the anterior extremity of the inferior horn, without displacing the parts, yet the inner surface of the posterior lobe was not more narrowed than the portions of the hemisphere more anterior to it. The third ventricle was considerably widened. The flat inner or median surfaces of the optic thalami were at least half an inch asunder. The cavity of the infundibulum was enlarged in proportion; but the aqueduct of Silvius, or passage to the fourth ventricle, was of its usual dimensions. The tela choroidea and plexus choroides had entirely disappeared, so that the third ventricle communicated, at all points, freely with the lateral ventricles and the general cavity of the cranium. The only change in the corpora striata and optic thalami, was their being less elevated than usual. The tænia semicircularis was very distinct. The colliculus, or ergot, in the posterior cornu of the left hemisphere was entirely gone, the very wall from which it projects having disappeared; nor was this eminence at all perceptible in the right hemisphere. Both hippocampi remained in the inferior cornua, but they were broader and less elevated than usual. The band on each of them, called the *tænia hippocampi*, so remarkable in a healthy brain, was entirely wanting; and, in consequence of this, the inner border of each hippocampus flowed gradually into the inner convolution of each middle lobe. The whole inner surface of the ventricles was quite smooth, and lined with an epithelium, preserving all the increased thickness and strength which is so remarkable in every case of hydrocephalus.

"The thickness of white nervous matter within the cavities of the ventricles and the basis of the convolutions, was diminished proportionally to the enlargement of these cavities. Opposite to the junction of the posterior and inferior cornu of the right lateral ventricle, it measured only a sixth of an inch.

"The only part where the convolutions were distinctly diminished in depth, was opposite to the posterior horn of the left lateral ventricle. Here they were fully one-half lower or shallower than usual. At all other parts they were of their usual dimensions, and, on being divided, exhibited the usual proportion of white and brown matter.

"All the parts in the region of the basis of the brain were entire. The olfactory and optic nerves, and the motores oculorum, could be distinctly traced to their origin; and they presented no appearance of derangement of structure.

"The only change which the substance of the cerebellum had undergone, was a little flattening of the left hemisphere, and proportional

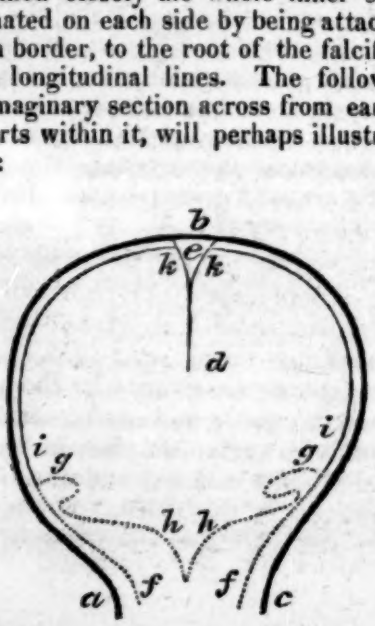
elevation of the right; and the vermiform processes and parts usually occupying the median plane, were placed about an eighth of an inch to the right of this plane. Internally, its structure was perfectly natural; and the fourth ventricle had undergone no enlargement. All the nerves issuing from it, viz. the trigeminal, the pathetic, the abductores oculorum, the facial, and the auditory pairs, were quite entire.

"The medulla oblongata, and the nerves springing from it, were in a healthy state.

"The pia mater presented nothing unusual. A whitish tough cord, of the diameter of a crow-quill, ran across from one hemisphere of the brain proper to another, which, on minute examination, was found to be a tube, and seemed obviously to be a branch of the arteria corporis callosi.

"All the parts which were provided with pia mater, were likewise covered with a natural arachnoid membrane.

"One of the most remarkable effects, however, resulting from the disease in this instance, was the production of a new membrane, which was interposed between the dura mater and the water, over the whole extent of that part of the enlarged cavity of the cranium which was not occupied by the brain. This membrane was perfectly transparent and colourless, without any appearance of laminæ or fibres, or vessels of any kind. It was soft and flexible, and about three or four times thicker than the arachnoid membrane, even where that membrane is thickest, in the region of the basis of the brain. In short, it resembled, in a remarkable degree, the amnion of the gravid uterus. It arose below from the whole inner and upper edge of each hemisphere, from the external border of the posterior lobe, and from the inner convolution of the middle lobe, along that line to which the arachnoid membrane is affixed in the basis of the brain; but it was not continuous with that membrane at this part. Extending upwards from these attachments, it lined closely the whole inner surface of the dura mater, and terminated on each side by being attached, along its whole upper and median border, to the root of the falciform process, along the course of the longitudinal lines. The following rude diagram, representing an imaginary section across from ear to ear of the dura mater, and the parts within it, will perhaps illustrate the connexions of this membrane:



The outer strong line, *a b c*, is a section of the dura mater; *b d*, a section of the falciform process; and *e*, a section of the superior longitudinal sinus in that process. The dotted line, *f g h*, represents the outline of a section of each hemisphere of the brain proper. The fine line, *i k*, represents a section of the new membrane, issuing from the upper edge of each hemisphere below, and attached to each side of the root of the falx at *k* above.

"At its origin from the hemispheres, its root could be easily separated into two layers for the extent of about an eighth of an inch, and each layer was continuous with the arachnoid membrane, crossing the convolutions thus:— Its outer surface was applied close to the dura mater, but it was not attached to it at a single point, except close to the falx above; so that it was quite movable upon it, and could be raised from it with the utmost ease. Towards the fore part, three large venous trunks could be seen running upon its inner surface towards the longitudinal sinus, into which they opened. These corresponded exactly to the large anterior venous vessels of the pia mater in a healthy brain.

"The whole great brain, or brain proper, weighed, with the pia mater and arachnoid membrane, 16¾ ounces.

"The right hemisphere weighed 8½ ounces, the left 8¼, or ¼ ounce less than the right.

"The weight of the whole cerebellum, with its membranes, and the medulla oblongata attached to it, was 2½ ounces; so that the weight of the whole brain was 19¼ ounces."

Dr. Duncan is of opinion, that the membrane described by Dr. Gordon is not to be regarded as a new one, but as the arachnoid coat, morbidly distended and thickened. In this supposition we cannot agree, as it is expressly stated that there was "a natural arachnoid membrane" besides.

In a recent number of the Revue Medicale, M. Bayle has related some cases of disease in different parts of the *brain* and *spinal marrow*, which appear to us more valuable than all his numerous experiments and physiological speculations. The first case, when viewed in conjunction with others of a similar nature, may be regarded as proving that the general doctrine, which constitutes the brain the exclusive seat of sensation, is not true,—at least in its full extent. It likewise presents what we believe has at present no parallel in the records of pathology, —viz. an example of a cancerous, or rather of an encephaloid, tumour in the vertebral canal. A washer-woman, aged fifty-two years, suffered at first from severe lancinating pains in the thorax and abdomen, and afterwards in the pelvis and lower extremities; after a time, these became affected with convulsions, and at length with perfect flexion, immobility, and insensibility,—except that they suffered occasionally from shooting pains, which originated in the pelvis, and appeared to follow the course of the nerves. On examination after death, the

spinal marrow was found to be healthy as far as the tenth dorsal vertebra, where, on its posterior surface, a tumour was found between the folds of the arachnoid. This tumour was of an oblong shape, about two inches in length, and placed longitudinally in the medullary canal; its internal structure resembled the substance of the brain, but was firmer; it had no adhesion to the spinal marrow, which for two inches was rendered very soft throughout its whole thickness, and which, at the most prominent point of the tumour, appeared divided transversely; so that the two portions, separated by a slight interval, resembled two cones placed with their summits towards each other. An attentive examination of the parts did not lead to the discovery of a single fibre which remained free from the disorganization. The limbs were wasted, but the nerves did not appear to be smaller than usual. The most important part of this relation is, that, while the communication between the upper and lower portions of the spinal cord seem to have been cut off, the inferior extremities were nevertheless the seat of frequent lancinating pains.

Four examples, (and, so far as we know, only four,) of a similar nature have been recorded: one by DESAULT,* which took place in a man who had been shot in the back, at the right side, and before the inferior angle of the scapula. This patient lived above twenty-four hours, voiding his urine frequently and without difficulty, and being able to move the pelvis and inferior extremities up to the moment of his death. The ball had entered the chest between the eighth and ninth ribs, went through a portion of the right lung, penetrated the right side of the tenth dorsal vertebra, and entirely divided the spinal marrow. This is probably the only example in which the sudden division of the spinal cord has not been followed by paralysis of the parts beneath it; in all the other instances, the interruption has been the result of changes effected slowly. This case, it is true, falls not within the period assigned to the present compilation; but we have alluded to it, as interesting in relation to the others.

A second example of division, or rather interruption, of the spinal marrow, will be found in the London Medical and Physical Journal for July, 1823, related in Magendie's Journal, by Dr. Rullier: in this case, the patient retained the free use of his lower extremities, notwithstanding the almost complete destruction of a great portion of the spinal cord. And in the work lately published by M. Ollivier on the Spine,† we find two more instances of a similar nature; these we shall here record.

* *Journal de Chirurgie de* DESAULT, tom. iv.

† *De la Moelle Epiniere, et de ses Maladies, &c. &c.* Par C. P. OLLIVIER D'ANGERS, &c.—Paris, 1824.

A child, of eight or nine years old, of scrofulous constitution, fell a victim to caries of the vertebræ, accompanied by intense and continual headache, but retaining to the last the feeling and power of motion in the lower extremities, although they were weak and wasted. On opening the body, a complete interruption of the spinal cord was discovered, extending from the ninth dorsal to the first lumbar vertebra,—that is, about four inches. The envelope of the marrow was flattened, but presented no other alteration. The upper part of the cord terminated at the interruption in a sort of bulb; there was no medullary matter in the intervening space, but the sides of the sheath were in contact without adhering.

The last example is as follows:—A young girl, thirteen years of age, died in consequence of a disease of the spine, accompanied with protuberance of the vertebræ in the dorsal region. The patient had been able to move the thighs and legs, and had got out of bed three or four days before her death, the viscera of the pelvis, &c. having suffered no interruption in their functions. On examination after death two vertebræ were found carious, with a considerable flattening of the marrow throughout the extent of five inches; the membranes were inflamed; and, "at the lower part of the dorsal region, the nervous pulp, reduced to a putrid state, was converted into a pultaceous matter, and deficient for four or five lines."*

In allusion to cases of this kind, M. Bayle asks in what manner the phenomena is to be explained, and suggests the four following hypotheses:—1. Either the spinal marrow can serve as a conductor of sensation and motion, notwithstanding the entire disorganization in some part of its length; 2. or the enveloping membranes can discharge this function; 3. or the external impressions and the determinations of volition may be propagated by the anastomoses of nerves; or, lastly, the limbs can derive sensation and the power of motion from a portion of the spinal column which has ceased to communicate with the brain. He gives the preference to the last of these conjectures.

Another case related by M. Bayle is of considerable interest, from its relation to some of the many hypotheses prevalent in France about the functions of the cerebellum. A woman, aged seventy-two, enjoyed very good health up to the 14th of January, 1824, when she was suddenly seized with giddiness, and fell to the ground in an apoplectic fit. No palsy nor loss of sensation followed, but she remained in a state resembling sleep. About the third day, convulsions of the inferior extremities came on; and, on the fifth, coma and death. An enormous effusion of blood was found in the centre of the cerebellum, and considerable fulness of the vessels of the uterus and ovaries. This patient pulled away the limbs when very slightly pinched,

* *Lib. cit.*

and put out her tongue when desired; phenomena incompatible alike with the opinion of those who attribute movement, as of those who attribute sensation, exclusively to the cerebellum.

It was remarked, so early as the time of ARETÆUS, that paralysis took place on the side opposite to that on which a blow of the head had been inflicted; and so general is this, that some (Rouchoux, Serres, &c.) have denied the possibility of the injury and the palsy both occurring on the same side. In a memoir on this subject, by M. Bayle,* we find eight examples in which, on examination after death, *the lesion of the brain was found on the paralysed side.* They stand as follows:—1. A blow on the left temple: palsy of the right arm; effusion of blood on the right; and no lesion of the left side of the brain. 2. Comatose affection, with hemiplegia of the right side; disorganization of the cerebrum and cerebellum on the same side. 3. Attack of apoplexy, with hemiplegia of the right side; erosion of the right optic thalamus, and effusion of blood into the ventricles, so as to produce considerable pressure on the right side, and but very little on the left. 4. Attack of apoplexy, with hemiplegia of the right side, which passed off to a considerable extent after a time; in four years, a fatal seizure. Three cavities with apoplectic cysts, effusion of blood into the optic thalamus, and softening of the corpus striatum,—all on the right side. 5. Apoplectic seizure, with hemiplegia of the right side; softening of the right hemisphere. 6. Apoplectic attack, with hemiplegia of the right side; bloody extravasation in the right hemisphere. 7. Mania, with epilepsy; palsy of the left side: rachnitis and softening of the left hemisphere.—These cases are taken from the works of Smetius, Forestus, Valsalva, Bruner, and Morgagni, the seventh only being his own; and it is remarkable as the only instance in which the injury and palsy both occurred on the left side.

M. Bayle endeavours to explain this phenomenon by supposing that there are some nervous fibres which do not cross. "In fact," says he, "amid the fasciculi of nerves which compose the medulla oblongata, the anterior, which intersect each other before they arrive at the brain, contain some fibres which do not appear to undergo any kind of crossing; while the posterior and lateral fasciculi do not present any manifest intersection."

One of the fashions at present prevailing among the French, is for the elder physiologists to set on some of the younger to write for them, and bolster up their reputation by the repetition of their experiments and the reiteration of their opinions. It appears to be with this view that M. LAGRAMPE-LOUSTAU has been made to publish some researches conducted "under the eyes of M. SERRES." It was a problem laid down for solution

* *Memoir sur l'Existence de la Paralysie du même côté que la Lesion Cerebrale qui la determine*, par A. L. I. BAYLE.—(Revue Medicale, Janvier.)

by the latter, in his work on Apoplexy,—"a paralysis being given, to determine its seat by the symptoms?" In the Memoir before us we find it asserted, that palsy confined to the arm arises from a lesion of the posterior part of the optic thalamus, and of its posterior radiations; that paralysis of the leg proceeds from injury of the anterior half of the corpus striatum, or of its anterior radiations; that in hemiplegia it is a lesion of the corresponding half of the optic thalamus and corpus striatum, or of the radiations proceeding therefrom. In one case it was the anterior part of the corpus striatum, and posterior of the optic thalamus, which were affected. In short, according as the palsy is more complete in the arm or in the leg, is the alteration more deep and more extensive towards the thalamus or the corpus striatum. Laying these positions down as facts, it is concluded that the posterior radiations of the optic thalamus preside over the movements of the arm, and that the posterior radiations of the corpus striatum preside over the movements of the leg.*

Connected with pathology, we may mention a case of *malformation*, which we owe to Dr. Holmes, of Montreal.† In a man, who lived to the age of twenty-one, notwithstanding that he had been delicate from infancy, and suffered much from palpitation attended with blueness of the lips, it was found that the right auricle had become so much enlarged as to be capable of containing a pint, the musculæ pectinatæ being very strong, and the inner surface feeling gritty, apparently from earthy deposition. No communication existed between this auricle and its corresponding ventricle, but the blood passed from it into the left ventricle by a large opening, furnished with valves similar to the bicuspid. Between the ventricles, a communicating aperture, with tendinous margins, existed, just beneath the semilunar valves of the aorta. The foramen ovale was open. The right ventricle was much smaller than usual; the left much enlarged, and very thin. The course of the blood must obviously have been as follows:—Entering the right auricle by the two cavæ, it would pass into the left ventricle, except a small portion that might get into the auricle; on the ventricles contracting, such portion of the blood on the left side as was not thrown into the aorta would pass into the right ventricle, and hence reach the lungs, to be returned to the left auricle.

A case of *gangrene of the heart* has been put on record by Dr. Kennedy, of Glasgow, which, although described in rather an affected style, is nevertheless possessed of sufficient interest for quotation.

* *Recherches faites a l'Hospice de la Pitie, sous les yeux de* M. Serres, *pour determiner les Rapports des Lesions du Cerveau avec les Paralysies des Membres, superieurs et inferieurs.* Par M. Lacrampe-Loustau.—(Revue Med. 1824.)

† *Case of Malformation of the Heart.* By W. F. Holmes, M. D. &c.—(Transactions of Medico-Chirurgical Society, Edinburgh.)

"This disease, in the progress of its ultimate stage, was accompanied by the following manifestations:—Together with an unsteady glistening eye, an indescribable expression of anxiety was depicted on the patient's countenance. Depositions of dark sordid matter on her gums and teeth were incessantly renewed. The surfaces of her tongue, mouth, and fauces, were parched, rough, and black: in the end, the margins of her lips grew quite livid. Her voice was broken and mournful. The dejections consisted of very dark, scybalous, intolerably fœtid substances; her urine was scanty, thick as syrup, and porter-coloured.

"Her pulses, at first small, hard, irregular, rapid, afterwards became feeble and less frequent, and intermittent: long before death, they disappeared altogether from the wrists. Syncopal tendencies often recurred, but never terminated in fainting. A sensation of burning heat pervaded all the regions of her chest; in the left it was excruciating. During the last four days of her life, the patient suffered much from stinging pains, which first occupied her extremities, then pervaded the shoulders and line of the vertebral column, then seized the left thoracic department, and, after the last bleeding, went to be immoveably fixed in the right hypochondriac region. She had catchings in the chest and orthopnœal breathing.

"At an early period, cardiac palpitations supervened, and gradually acquired frequency as well as strength. As the disease advanced, however, and the powers of the heart began to yield, its actions became very intermissive and troubled. All the extremities, superior and inferior, suffered progressive tumefaction from the diffusion of extravasated lymph. The left arm and limb, in particular, were distended almost to bursting: their joints, at first nearly inflexible, could not, during the three days which preceded her dissolution, be moved without occasioning exquisite pain. Broad livid patches, in some places, disfigured their surfaces; on others were large sphacelated wheals. At the same time, she was altogether so impotent as to be incapable of changing, in any degree, her position without assistance. Many hours before her demise, she fell into a state of comatose abstraction, which uninterruptedly increased, till the last of her vital forces irreparably failed.

"Twenty ounces of turbid serum were taken from the chest; it had an impure orange colour and a fœtid smell. The pericardium enclosed four ounces of a fluid in all respects similar. On the internal surface of this capsule was much vascular net-work, dark, as if composed of injected veins.

"All the parts of the heart, external and internal, exhibited distinct marks of having been the seat of gangrenous inflammation. They were preternaturally flaccid, and dark in colour as the darkest coagulated venous blood; they could be easily perforated in every direction with the finger. When thus torn, they exhaled a putrid odour; but no blood exuded from their ruptured vessels. The left ventricle, in particular, was quite livid, and destitute of its muscular tenacity; it was little firmer than cerebral structure. When lacerated, it threw out a most offensive odour, not different from what is generated by putrescent animal substance. All the cavities of the

heart were empty; but the large veins, especially the abdominal, were loaded with grumous blood.

"On the thoracic face of the diaphragm and surfaces of the left pleural membrane, were small patches of vascular reticulation; in other parts, they were roughened with darkish granules, having more firmness than those by which structural lesions are repaired. Although heavily loaded with blood, the lungs appeared healthy; they remained free from adhesions of every kind.

"Patches of morbid structure, unequal in size, and discoloured to various shades of darkness, had formed on different parts of the surface of the body; some of them were putrescent, others putrid. Each of the left extremities was in a state of general tumefaction, and firm from distention: around their articulations, and over the central portions of their muscles, the surface had assumed a lived hue."*

Three cases, by MM. ANDRAL and BAYLE, are to be found in a recent French periodical, in which the heart was affected with a disease having all the characters of cancer. It is remarkable, but from these cases it would seem that the muscular fibres of that organ may be in part destroyed, without any considerable derangement of the circulation.†

M. LOUIS has devoted much attention to the history of those cases in which a communication exists between the right and left cavities of the heart, and the following are the results at which he has arrived:‡—This communication may exist in a variety of ways, but the most common are the foramen ovale, and the perforation of the interventricular partition. It is congenital; is associated, in the majority of cases, with a well-marked narrowing of the pulmonary artery, and always with dilatation of one or more of the cavities, generally with those of the right side. The effect of this communication is a mixture, more or less ample, of the black and red portions of the blood; but the blue colour of the surface is rarely universal: sometimes it is only preserved in the face during the last few weeks of the patient's life, and occasionally is not perceptible at all. This communication, and consequent mixture of venous and arterial blood, may exist a long time without the health being affected, and many of the characters, as the discolouration and the sensibility to heat and cold, and sense of suffocation, are frequently wanting. The only pathognomonic symptom, according to M. Louis, is frequent fits of suffocation, which often come on periodically, and are excited by the slightest causes. The disease is neither incompatible with long life, nor with development of the intellectual faculties. These remarks are in conformity with general observation.

* *Medical Repository*, April. † *Revue Medicale*, Fevrier, 1824.

‡ *Observations suivies de quelques Considerations sur la Communication des Cavités droites avec les Cavités gauches du Cœur.* Par M. LOUIS.—(Arch. Gen. de Med. Novembre, 1823.)

A Memoir on *the pathological anatomy of the peritoneum*,* by Dr. SCOUTTETEN, contains many instructive remarks, particularly with regard to inflammatory affections of that part. A good account of these has been given in the last number of a respected contemporary Journal,† which we shall here transcribe into our pages.

"1. *Peritonitis Acuta.*—Our author thinks, and with justice, that it is needless to give various names to peritonitis, according to the portion of peritoneum which is inflamed, as omentitis, mesenteritis, &c. It is important, no doubt, to ascertain, as nearly as possible, in what portion of the membrane the focus of inflammation is placed, merely that the external means of relief may be there applied; but, to give names to these, is worse than useless.

"When irritation has been determined to the peritoneal membrane, and there produced the mildest shade of inflammation, we observe small red spots, not more than a line in diameter, separated from each other, and, on minute examination, appearing to be clusters of puncta crowded close together. Between these red spots, the peritoneum, when viewed with a good magnifying glass, presents portions of its surface of a natural colour. The appearance now described is rarely to be seen in man, for obvious reasons; but it may be readily produced in animals, as dogs, by injecting an irritating fluid into the cavity of the peritoneum. Thus, if bile be thrown in and the wound closed, the above appearances will be strikingly produced in twenty-four hours.

"It has been remarked by several acute observers, that all the symptoms of peritoneal inflammation have been present during life, and yet on dissection no trace of it could be found on that membrane. On this point our author professes to be sceptical. But we think there can be no reason to doubt that mere injection of vessels, or the first stage of inflammation, where the structure of the tissue is not altered, may disappear in the interval between death and dissection. Indeed, our author's own experiments give the greatest support to this opinion. Into the peritoneal cavities of dogs he injected bile, and, at the end of twenty-four hours, examined the abdomen, when inflammation was unequivocal. The animal was then immediately killed by pithing, and an evident diminution of the inflammation took place with death. As the days got cold, the diminution was still greater. These experiments were repeated many times, and always with the same result. It is therefore highly probable, if not quite certain, that the first stage of peritoneal inflammation, in some particular constitutions, may produce such disturbance in the vital functions as to destroy life; and that the collapse after death may dissipate the redness and other marks of phlogosis which existed anterior to that event.

"In the early stages of inflammation, our author found by experiment that the surface of the peritoneum, though apparently dry and glistening, was, when touched with the finger, covered with an unc-

* *Archives Generale de Medecine*, Dec. 1823, Feb. 1824.
† *Medico-Chirurgical Review*, June.

tuous and viscid exudation. Sometimes, instead of the red spots above described, this first shade of phlogosis presented merely a development of red vessels running in lines to a greater or less extent.

"In the progress of the inflammation, the red spots become more extended and close together,—ultimately so blended as to appear one homogeneous patch, of a scarlet colour. Still at this period the distended vessels are visible, but the peritoneal tissue does not appear to be thickened. It has, however, by this time lost its transparency. When the phlogosis is still more advanced, the redness becomes more intense and extended: sometimes occupying the whole peritoneal expansion; at others, bounded to the forms of bands or stripes, traversing various portions of intestine, or only occupying the space where the intestines adhere to each other. The intense red colour at this period is not wholly owing to the injection of vessels, but to a sanguineous exudation which is diffused over the peritoneal surface, adhering very tenaciously to it, and presenting a villous appearance. Even in this stage the peritoneum will sometimes appear dry and shining; but, more commonly, we now find an effusion of a whitish fluid into the abdominal cavity.

"Such an acute inflammation of the abdomen can only last, our author thinks, a few days, (three or four,) without death or a change for the better. The abdominal pain is generally very acute,—the patient drawing up the thighs, or bending the body forwards, to relax the abdominal muscles. Sometimes the pain is bounded to a single point, and then we generally find the inflammation also bounded to the same spot. On the 3d September last, our author opened a man who had felt acute pain in the right iliac region for two days prior to his death. He found, on dissection, the marks of intense inflammation of the peritoneum bounded to the appendix cæci. At times, the peritoneum covering the bladder will be the seat of phlogosis, and then the evacuation of the urine will be almost uniformly suspended, and the pain felt in the pelvis. The peritoneum covering the inferior surface of the diaphragm may be the sole seat of inflammation, and then we have almost constant hiccup. A soldier in the Val de Grace Hospital experienced, for some days, an intense gastro-enteritis, which began to give way to the usual means, when all at once a violent pain was experienced (augmented by pressure) in the direction of the diaphragm, accompanied by constant hiccup, shrinking of the features, drawing up of the legs and thighs. These symptoms could not be controlled, and he sunk in two days. M. Broussais prognosticated the existence of sub-diaphragmatic inflammation of the peritoneum, which was completely verified by dissection.

"In acute inflammation of the peritoneum, we have this membrane sometimes of a purple or even black colour, with strong adhesions of the folds of intestines together, without the intervention of a false membrane, which at other times is occasionally, indeed often, seen. Actual gangrene of this membrane has been found after death; but this is of rare occurrence.

"Another phenomenon, of still rarer occurrence, presented itself to our author in the year 1822, in the body of a man who had died of acute peritonitis. This was a subperitoneal emphysema. The whole

sheet of this membrane was equally elevated by gas, which could be pressed from place to place, and made to accumulate in particular positions. In another case he found the same phenomenon, but on a much more limited scale, the emphysema being bounded to the peritoneum lining the diaphragm and covering the liver. In neither of these instances was there any sign of putrefaction to account for the collection of gas.

"Between the laminæ of peritoneum forming the mesentery, we sometimes find collections of purulent matter, in peritoneal inflammation. This, however, is not of frequent occurrence.

"When peritoneal inflammation is extended to twenty, twenty-five, or thirty days, false membranes of albuminous matter are found gluing the convolutions of the intestines together, and even these last to the peritoneum lining the abdominal parietes.

"During the first few hours of acute peritonitis, there is very little effusion of fluid beyond the usual halitus; but, after the inflammation has lasted thirty-six or forty hours, there will be an evident effusion, generally of a whitish or milky appearance. Blood itself has been found extravasated in acute peritonitis; but this is a rare phenomenon. The quantity of effusion varies from a few ounces to some pints. Sometimes it is nearly as limpid as water, and containing no albuminous flocculi; in other cases it is thick, and resembling diluted pus of a very peculiar odour, which can never be forgotten by those whose hands have been imbued in it.

"2. *Alterations of structure observed after chronic inflammation of the peritoneum.*—Chronic is often the consequence of acute peritonitis; but it also not unfrequently creeps on in a slow, and almost insensible, manner, without any violent symptom. This last may be properly termed 'primitive chronic peritonitis.'

"*Chronic after acute peritonitis.*—On opening the body of a person who has had peritonitis for fifty or sixty days, we shall find the abdomen containing a greater or lesser quantity of a whitish fluid; a number of false membranes glueing the intestines together, or forming sacs which contain fluids of different appearances. When these false membranes are detached from the peritoneum, we shall find that structure less red than in acute peritonitis,—sometimes, indeed, scarcely coloured. In these cases, the effused fluid is rarely in such quantity as to sensibly distend the parietes of the abdomen. In some cases, however, a considerable quantity of limpid yellow serum will be found, without any trace of false membranes, but with the peritoneum thickened, reddish, and highly injected; or the great omentum thickened, red, fleshy, or presenting hydatiform bodies. These two shades of peritonitis are not attended with much pain, and bear abdominal compression without much inconvenience. The patients only complain of a sense of weight, and they are much harassed with constipation of the bowels. When chronic peritonitis has lasted many months, in certain constitutions, we find, besides numerous adhesions and false membranes, a development of tubercles, of different sizes, and various degrees of consistency.

"Instead of the serous or puriform fluids which we generally find

after peritoneal inflammations, there is sometimes, though rarely, an extravasation of sanguinolent, or even pure sanguineous fluid, resulting from rupture of vessels.

"Of ulceration, gangrene, and schirrus, of the peritoneum, we shall not speak, as they are extremely rare in their occurrence.

"The above are the general appearances presented after inflammation, acute and chronic, of this important membrane, and the practitioner should bear them in mind when he is prosecuting his researches, on dissection."

We lay before our readers a brief notice of Dr. DUNCAN's opinions with regard to those serious, and even fatal, consequences which occasionally follow slight wounds received in dissection, or from simple venesection. A very striking example of what he has called *diffuse inflammation of the cellular membrane*, attended by some anomalous symptoms, remains to be mentioned in this place. A woman, aged thirty, fell under Dr. Duncan's care, in September, 1821, labouring under symptoms which were regarded as the fever at that time prevailing epidemically in Edinburgh. After a few days it was perceived that the right arm and right side of the thorax were affected in a manner similar to what occasionally results from venesection; and it is proper to observe that the patient had been bled, the lancet-wound healing by the first intention. From this time the symptoms increased, notwithstanding the administration of an emetic, general and local blood-letting, and strict antiphlogistic regimen. After a few days she began to mend, and continued alternately recovering to a certain extent, and again relapsing. During one of these accessions of fever, she complained of severe pain of the right side, increased on pressure; the side was swollen, and a tumour, about the size of a pigeon's egg, was perceived above the right clavicle. Soon after she was attacked with some cough and free expectoration; at the same time the external tumours began to soften, and ultimately became emphysematous,—a gurgling noise being heard as the air rushed into them during respiration. As the breathing became much more oppressed whenever the expectoration diminished, it was judged advisable to make an opening into the side, so as to give a free vent to the pus as it formed. This was accordingly done by Mr. WISHART; when a blast of air was discharged by the wound, in addition to the pus. From this time she scarcely brought up any matter by expectoration, but gradually sunk, and died on the 3d of December, being rather more than three months from her first admission into the hospital. On examining the body, very extensive abscesses were found on the breast and neck, communicating with the lungs: so that the case presents a remarkable instance of circumscribed emphyse-

matous tumours, in which the air was confined in cysts bounded by adhesive inflammation.*

We now turn to some points touching the pathology of the *fluids*.—An extensive series of experiments, conducted with the utmost care, and showing the remarkable advantage of being directed to a distinct and useful end, have been recently performed at the Hôtel Dieu, under the superintendence of M. RECAMIER.† The first experiment will at once illustrate an important general fact, and show the minute attention displayed by M. BELHOMME, by whom the observations are recorded. "Two bleedings were carried on at the same time, the vessels used being the shape of inverted cones. Robillard, a man aged thirty-five, of athletic constitution, had made a violent exertion, in consequence of which he suffered in the lumbar region. He was seated. *Right arm*,—opening in the skin one line and a half, in the vein one line; jet of little strength, continuous for three inches, and lasting three minutes. *Left arm*,—opening in the skin two lines, in the vein one line and a half; jet very strong, rapid, continuous for seven inches, and lasting two minutes. Result: *Right*, no buff; clot of the ordinary consistence. *Left*, very thin layer of buff; clot and serosity as on the right."—By this experiment it is shown, that the blood flowing from a large opening, with a powerful jet, afforded a buffy coat,—slight, it is true, but yet distinctly marked,—and which was entirely wanting in that which flowed from a narrower aperture and less forcible jet. This circumstance held good as the general result in a numerous series of experiments. All the observations of M. Belhomme were conducted in the same minute and careful manner. Convinced that the blood always participates in the alterations of the solids, he devoted particular attention to its condition in patients labouring under various diseases, and in pregnant women; but, equally persuaded of the influence of certain accidental circumstances in producing certain appearances, he very properly thought it necessary to begin his examination with persons, either in health or but very slightly indisposed. He found that, in all, certain states favour the formation of the buffy coat:—viz. 1st, an aperture of moderate size; 2d, a rapid and continuous jet; and 3d, receiving the blood in a narrow vessel. With a view to greater accuracy, he made exact measurements of the vein and of the skin, of the jet of blood, the time during which it flowed, and the vessels

* *Case of Diffuse Inflammation of the Cellular Substance of the Side, &c. &c.* By ANDREW DUNCAN, jun. M. D.—(Transact. Med. Chir. Society, Edinburgh.)

† *Observations faites a l'Hotel Dieu, pendant l'Année*, 1823, *sous les Yeux de* M. le Professeur RECAMIER, *sur le Sang et la Couenne Inflammatoire.* par J. E. BELHOMME; *precedées de Reflexions generales*, par A. DUGES.—(Revue Medicale, Mars, 1824.)

into which it was received. In the language of M. Belhomme, an aperture is said to be moderate when its length is a line; large, when two lines; and very large, when three. He points out the necessity of distinguishing between the opening in the skin and in the vein, the former being always larger. He found that the materials of which the vessels were made, had no influence on the phenomena presented by the blood which they contain; but, in general, the one last filled had a more distinct buffy coat.

After having ascertained the influence of external circumstances, M. Belhomme inquired into the effects of physiological and pathological causes. On this subject he informs us, that, even in the healthy state, the buffy coat is generally formed under the circumstances we have above alluded to as favourable to its development. In pregnant women, as is well known, there is a general tendency to this phenomenon; but a remark which, so far as we know, is peculiar to M. Belhomme, is the existence of a peculiar odour in the blood of pregnant women, exactly resembling that of the placenta, when recently expelled. This phenomenon, which is stated to be constant, might be of use in cases of doubtful pregnancy. In subjects labouring under inflammatory and febrile attacks, a great disposition to the formation of the buffy coat was manifested; but even here it was modified, or overcome, by external circumstances. A patient, who had a relapse of inflammation of the chest, with expectoration of blood and much fever, was bled, in the sitting posture, in both arms: one vein was very large, and the aperture made into it was three and a quarter lines in length, from which the blood flowed in a rapid continuous stream: on this a very firm buff formed, between five and six lines thick. On the other side, the aperture in the vein was only half a line, from which a fine but rapid jet flowed; but no buffy coat resulted. It is true that analogous observations have been made before, but they are more precise and satisfactory in the Memoir before us than in any preceding one with which we are acquainted.

Dr. Bellingeri has made *the state of the blood, with regard to its electric phenomena* in different diseases, the subject of an essay,* in which he states, that in the phlegmasiæ there is an evident diminution of electricity, which again returns as the disease loses its intensity; while the contrary holds good with regard to chronic affections. The blood, as it flows from the vein, does not always evince positive electricity: on the contrary, in some cases of severe inflammation, it becomes negatively electrified; and, where a buffy coat forms, there the

* *Memorie della Reale Accad. delle Scienze di Torino, t.* 24.

electricity of the blood, as its flows, will be found inferior to what it is during health. But the buffy coat never forms in any case where there is a degree of electricity superior to that which belongs to the state of health: when the buffy coat does form, the blood retains the degree of electricity which it had in the veins longer than under other circumstances. In general, at the commencement of a bleeding, the blood is of deeper colour, more dense, and less electrical, than what flows afterwards: in other respects, the blood taken from a vein has a tendency to the equilibrium of the surrounding atmosphere.

A well marked example of that singular disease to which the name of *anæmia* has been given, has recently been recorded by Dr. Combe,* who gives the following well-drawn picture of the complaint:

"It was in the month of July, 1821, that I was first consulted by Alexander Haynes, the subject of this case, on the nature of his complaints. Even at that time I was much struck by his peculiar appearance. He exactly resembled a person just recovering from an attack of syncope: his face, lips, and the whole extent of the surface, were of a deadly pale colour; the albuginea of the eye bluish; his motions and speech were languid; he complained much of weakness; his respiration, free when at rest, became hurried on the slightest exertion; pulse 80, and feeble; tongue covered with a dry fur; the inner part of the lips and fauces were nearly as colourless as the surface. He says that his bowels are very irregular, generally lax, and that his stools are very dark and fetid; urine reported to be copious and pale; appetite impaired; of late, his stomach has rejected almost every sort of food; has constant thirst; he has no pain referable to any part, and a minute examination could not detect any structural derangement of any organ. He is forty-seven years of age; was born, and has spent the greater part of his life, in the country, engaged in agricultural employments; for a few years has been servant to a corn-merchant, where his duties are neither laborious nor unhealthy. He is married, and has no family; leads a regular and temperate life; has enjoyed perfect health since childhood, and has never been blooded. He was advised to use some medicine to correct the state of his bowels, to confine himself to a light diet, and to take gentle exercise."

Tonics (particularly iron), mercury, opium, and other remedies, were employed, and he appeared for a short time to improve; but soon after he relapsed, and, gradually sinking, died in January, 1822. On examination after death, effusions were found in the chest and abdomen, and a rough irregular ossification, an inch in length, imbedded in the folds of the dura mater, near the vertex; but by far the most important appearance was

* *History of a Case of Anæmia.* By J. S. Combe, M. D. Fellow of the Royal College of Surgeons, Edinburgh.—(Transactions of the Medico-Chirurg. Society of Edinburgh.)

an almost bloodless condition of every viscus and structure in the body, with the exception of the spleen, which was very soft, and the contents of which "turned out as from a sac," on pressure being applied. The heart, when cut into, was pale, and did not stain linen when rubbed upon it; no blood exuded from the spleen, on cutting into it; the kidneys were nearly bloodless; the arteries universally empty, as were the jugular, humoral, and femoral veins; the whole muscular structure, in every part of the body, exhibited the same pale colour as the heart, which seemed as if it had been macerated for many days in water.

A very lengthy paper has been published by M. GASPARD, on the subject of *putrid diseases*,* in which he attacks BROUSSAIS by a side wind, and earnestly invites practitioners to return to the old treatment of fevers and putrid diseases, by means of antiseptics, acids, astringents, bitters, aromatics, and cinchona. The general manner of reasoning, or rather of discoursing, upon the subject, is this:—he injects water, in which putrid animal matter has been allowed to steep for a longer or shorter period, into the veins of animals; and he finds vomiting, purging, fever, &c. produced; in which symptoms he finds an exact resemblance to typhus, dysentery, and similar complaints. The next step is to immerse animal substances in different fluids, as vinegar, wine, muriatic acid, &c.; and the result is, that they are preserved "almost indefinitely." In the last place, the first experiment is repeated; and, after the animal has had putrid matter poured into the veins, some of the correctives are injected after it, and lo! some of the patients are thus restored. We shall give the first example in the memoir of each of these experiments; which, we think, will serve to justify the remarks made in a preceding part of this paper.

"*Exp.* I.—'The 27th of March, 1823, I injected into the right jugular of a lamb, aged two months, half an ounce of water, fetid, but still transparent, in which some veal had macerated and rotted during some days. The first symptoms which resulted were pain and frequent acts of deglutition during the injection; vain efforts to vomit; and, in a quarter of an hour, loss of strength, inability to stand, respiration somewhat embarrassed, repeated alvine evacuations, abundant flow of mucus from the nostrils (which continued until death); next, fever, small and very frequent pulse, increasing salivation, alvine evacuations, liquid and watery, repeated every instant, but without fetor, accompanied with tenesmus and painful retraction of the abdomen; *at length, long agony, with continual moans and occasional howls, and death seven hours after the injection.*' Of the examination after death, it is sufficient to say, that the stomachs were sound,

* *Second Memoire, Physiologique et Medical, sur les Maladies Putrides.* Par B. GASPARD, D. M. &c.—(Journal de Physiologie, t. iv. No. 1.)

but the small intestines were inflamed; the smallest laceration or incision into their parietes giving vent to black fluid blood; the lungs spotted black in different points, and showing serous effusion, both into their texture and the cavity of the pleura; the left side of the heart, the liver, spleen, &c. having numerous spots of ecchymosis."

Exp. III.—"I preserved for a very long time, and almost indefinitely, some meat in whey, weak vinegar, cream of tartar, wine, very dilute mineral acids, carbonic acid, chlorine, cinchona, gentian, sulphate of quinina, &c."

Exp. IX.—"On the 19th of February, I injected into the jugular of a very small dog, at first half an ounce of putrid water, with meat steeped in it, which excited great agitation, with efforts to vomit, followed by a great calm and species of syncope. Afterwards I introduced slowly, and at five times, two ounces and a half of a limpid, but very strong, decoction of red bark. Now the animal, after these different injections, was in a state of stupor, arthenia, and paralysis; which, however, gradually went off a little, so as to allow him to move about, with staggering, for nearly half an hour. At the end of this time, complete failing of strength returned, and he lay upon the side; flaccidity of the members, and soon after very laborious respiration; belly painful and elastic; sero-mucous running from the anus; and then, at the end of an hour, a liquid, yellow, gelatinous stool. After this his condition became pitiable; belly more and more painful, great dyspnœa, redness of the conjunctiva, eyes tearful, stiffness of the neck and limbs of the right side, *continual howling* (*cris en maniere de hurlements renouvelés a chaque instant*). Two hours after the experiment, I injected again, very gently, and at four times, two ounces of the same tepid decoction of cinchona: but the dog did not appear to experience any other effect or change than the cessation of its cries. As to the rest, it continued in a state of extreme debility, without, however, having any other alvine evacuation; respiration being long performed in sobs, and the animal at length dying three hours after the injection."

Such of our readers as are interested in the subject will find, in the memoir alluded to, many additional instances of animals similarly tortured.

The opinion that the various forms of varioloid eruptions are but modifications of each other, seems to gain ground; and we find an interesting letter on this subject, from Dr. Stoker, of Dublin, to Dr. Thomson, of Edinburgh,* stating the result of numerous observations in confirmation of this doctrine. He is of opinion that all the pocky exanthemata are derived from genuine small-pox, and conjectures "that it is only the peculiar virus of each which can give protection from the various forms which they assume after having once emanated from the parent-stock; forms which characterize them in each future transfer

* *Letter to* John Thomson, M. D. *Edinburgh, containing Observations on the Occurrence of Small-Pox after Small-Pox and Vaccination.* By W. Stoker, M. D. Dublin.—(Edinburgh Med. and Surg. Journal, January, 1824.)

ad infinitum." Dr. Thomson likewise informs us,* that the general results of his later observations and inquiries have tended to confirm the opinions which he formerly expressed with regard to the advantages of vaccination; the frequent occurrence of small-pox a second, or even a third time, in the same individual; and the identity of all the varioloid eruptions. He adds, that he has been led to believe that the *test-pock* of Mr. BRYCE bears the same relation to the primary cow-pock that secondary small-pox does to primary: in short, that cow-pox modify cow-pox, as small-pox modify small-pox.

MEDICINE (*including* Therapeutics *and* Materia Medica).

A general history of medicine has recently been published in Germany,† which is favourably spoken of in some of the foreign journals.‡ It is stated to be taken from the best sources, and to be executed with zeal and talent. The author begins by exposing the state of medicine among the Chinese and Indians, from the earliest times; proceeds to details regarding the science among the Egyptians; and afterwards passes on to the countries of Europe.

We have likewise to notice among historical records, an account of the *epidemics* which have at various times prevailed in different parts of the globe.§ The volume is divided into three parts: the first containing the history of epidemics from the most remote antiquity up to the period of general migration; the second, from this time to the crusades; and the third, from the crusades to the invention of printing.

A paper of some interest, connected with the history of medical science, will be found in a recent number of a respectable American publication. One of the circumstances enumerated as retarding the progress of the healing art, or even giving to it a retrograde course, is *the multiplicity of books*. As reviewers, who are compelled to peruse a great proportion of the medical works which issue from the press, we cannot but admit that it is surprising how few of the volumes which pass under our notice are really marked by novelty or genius; how few there are who study nature; how few, *in making a book*, think any thing more is requisite than to borrow from those who have gone before them.

It cannot be expected that we should often meet with new diseases, and the only thing having any claims of this kind is the account of a singular affection, attended with hiccough,

* *Lib. cit.* p. 92.
† *Geschichte der Heilkunde.* Von I. F. R. HECKER.—Berlin, 1823.
‡ *Leipz. Lit. Zeitung*, and *Bulletin des Sciences Medicales.*
§ *Chronik der Seuchen*, &c. Von T. SCHNURRER.—Tubingen, 1823.

which occurred to M. Mikisch, of Horsens.* This practitioner was called upon to attend ten individuals, under the following circumstances. They were attacked with rigors, perspirations, lassitude, and headache; bad taste in the mouth, and oppression in the epigastric region: some were constipated in the bowels, while others were affected with diarrhœa. *After a few days, they all had hiccough*, which at first was slight and with long intervals, but afterwards became more frequent and more severe, coming on every hour, and sometimes every half hour. If the patient heard another person hiccough, he began again, even although his own paroxysm might only have just ceased. During these fits, the patients presented a shocking appearance, the respiration being very difficult, and the countenance becoming purple from the interrupted state of the circulation; sometimes the rupture of a vein in the nostrils or fauces gave rise to a considerable loss of blood; and in other instances the patients had epileptic seizures, and rolled on the ground. During the continuance of the disease, none of them were affected with fever, but all were reduced to great weakness; some had a yellow circle round the eyes, as in the commencement of jaundice; the tongue was loaded and brown, and the urine deposited a copious sediment: in some females, the menses were suppressed.

M. Mikisch regarded the cause of this malady as depending upon some circumstance connected with the atmospheric temperature, or with some error of diet. In February much snow had fallen, after which the wind had veered to the south-west, and a complete thaw suddenly followed. The melted snow filled the wells, and was used by the peasants; but no noxious ingredients could be detected in it by chemical analysis. The bread was not bad; and their beer, though not well brewed, was such as the peasantry in Jutland usually employ: their cattle were healthy. Under these circumstances, M. Mikisch directed the patients to be separated, and placed in warm, well-ventilated situations; all spirituous liquors were withdrawn, (they had been using brandy,) and their beer was improved by the addition of bitters, and by attention to the process of brewing. Evacuants were next had recourse to: when their strength admitted, the patients were bled both generally and by leeches; in other cases, cold lotions were applied to the head, and warm fomentations to the limbs; emetics, purgatives, and mercurials, and afterwards bitters and antispasmodics, were administered, as indicated by circumstances.

The disease had broken out in March, and by the middle of May all the ten patients were restored to health. One woman

* *Bibliothek for Læger.*

continues to be attacked with hiccough every time her temper is ruffled, or when she remains long without eating; some of the others have a paroxysm after any excess in drinking.

The following case of what may be called *chronic hiccough*, we regard as possessed of some degree of interest, as connected with the preceding narrative. A young man, aged twenty-six, witnessed a scuffle between two individuals, by which he was much agitated; he had an epileptic fit, and afterwards was attacked with hiccough, which lasted for thirteen months. It came on ten or twelve times every day, and each fit lasted about half an hour: he was free from it during the night. After trying all the usual remedies without avail, recourse was had to sulphuric acid, of which a drachm was added to a pint of water, and three spoonsful taken every three hours. By this treatment he was speedily cured.*

The *croup* has long been known in this country as depending upon inflammation of the mucous membrane of the larynx and trachea, although its pathology would appear to have been less generally admitted in France, if we are to judge from a recent publication, in which much pains is taken to demonstrate the inflammatory nature of the disease.† Although, therefore, this view of the croup cannot be considered as possessing any features of absolute novelty, yet the work deserves to be mentioned in this place, from its containing a more complete history of the disease than any other with which we are acquainted. The author, M. Blaud, divides the croup into three varieties,—viz. that in which a false membrane is found; that in which inflammation ends in suppuration; and that in which the mucous secretions of the part are not altered, but merely increased in quantity. All these three varieties may exist together, and this he designates by the formidable name of *laryngo-tracheite-myxa-pyo-meningogene!!!* The symptoms are described with accuracy; and, among other circumstances, it is particularly remarked, that the sonorous or croupy cough and respiration do not belong to the variety in which a false membrane is thrown out, more than to the others. The method of treatment recommended by M. Blaud for the most severe form of the disease is remarkable for its activity, and consists chiefly in copious bleeding.

Perhaps we may be expected to take some notice, in this place, of a recent work on Dropsy, by M. Portal.‡ We shall only say, that we read it with the intention of making it the subject of an article in our Foreign Review, but found it so ut-

* *Annali Universali di Medecina*, Novembre, 1823.

† *Nouvelles Recherches sur le Laryngo-Tracheite, comme sous le Nom de Croup.* Par P. Blaud, D.M.P.—Paris, 1823.

‡ *Observations sur la Nature et le Traitement de l'Hydropisie.* Par M. Portal, &c. &c.—Paris, 1824.

terly destitute of any claims to novelty, or even to accuracy, that we conceive we best consult the reputation of the veteran author by letting it fall into oblivion as speedily as may be.

Among the very few novelties in the department of Therapeutics, we have to introduce to our readers, is the system of Dr. HAHNEMANN, under the name of *homœopathia*, which is used to designate the method of treating diseases by means of active medicines in doses of extreme minuteness. The fundamental principle of this theory is, that different complaints are cured by means which produce symptoms analogous to those of the disease: and that the remedy is appropriate in proportion to the strictness of the analogy between its effects and the disease it is intended to cure. Thus, a chronic disease may be arrested by an acute one, and vomiting stopped by an emetic: in short, the principle is *similia similibus curantur*. Dr. Hahnemann, proceeding upon this idea, argues that, as an atom of vaccine virus is sufficient to give protection against small-pox, —or an atom of any other morbid poison, as syphilis, is capable of giving rise to a disease similar to that in which itself has originated,—so atomic doses of active medicines, provided they be the proper contra-stimulus to the disease, are regarded as preferable to the same medicines in larger quantities. There appears much of hypothetical assumption in these doctrines, so far as we have yet been made acquainted with them; but numerous plausible cases are cited,* and we are promised further details in a system of Materia Medica, by Hahnemann.

We have alluded to the views of M. Hahnemann, however, chiefly for the purpose of introducing one of the most important illustrations of his doctrines,—one which, rejected in France, and almost unknown in this country, is nevertheless regarded by many in Germany as second in importance to the discovery of vaccination alone: we allude to the alleged efficacy of *belladonna as a preventive of scarlatina*. We are told that the author of this system, having observed that the drug in question, when taken in very small doses, produced symptoms analogous to those of scarlatina, was hence led to the conclusion that it was the proper antidote to the disease; a conjecture which at first was regarded, even in Germany, as too improbable to merit serious attention. But, lest our readers should still think thus of Dr. Hahnemann, and his claims to be regarded as a second Jenner, we shall lay before them the opinion of Professor KOREFF, in a letter to M. LAENNEC; an opinion which, he informs us, is founded on the observations of sixteen years.†

* By Dr. WIEDMANN, in HUFELAND'S *Journal der Practisch Heilkunde*, 11 cahier, 1823.

† *Sur l'Emploi de la Belladonne contre la Contagion de la Scarlatine; Note communiquée a* M. le Prof. LAENNEC, *par le* Prof. KOREFF.—(Bulletin des Sciences Medicales, Avril, 1824.)

"Observation clearly proves," says he, "that the belladonna, taken for some time, either in powder or in extract, produces, especially in infants, a redness of the skin, which is sometimes transient, but at others more durable; dryness of the mouth, with a sense of heat in the throat; dilatation of the pupil; anxiety; and occasionally swelling of the submaxillary glands: symptoms having a great resemblance to those which accompany the eruption of scarlatina. The effect of the belladonna has also this in common with scarlatina, that neither of them produce the redness of the skin invariably, whilst the symptoms about the throat are always present. I confess to you, however, that all these analogies did not appear to me sufficiently strong to persuade me that in this plant was really to be found a preservative against scarlatina, similar to that which the cow-pock affords against variola. It was not till I had received the authority of the celebrated Soemmering, who informed me that he had obtained the most satisfactory results with it when the disease raged epidemically, that I determined to employ it. This malady, accompanied by the most unfavourable symptoms, and having entirely changed its usual character, was at that time producing ravages almost as fatal as the contagious typhus. I then, for the first time, had the happiness to protect from this dreadful contagion almost all those who took the belladonna with a little perseverance, and of these there were many thousands. Since that time I have never lost sight of this discovery, which becomes the more valuable as the scarlatina has increased during the last thirty years, both in violence and extent, in many countries; and I have always found the same effects in different climates, and in epidemics of opposite characters. Many other physicians have equally confirmed the preventive powers of this plant, and the German Journals are daily filled with proofs of a benefit which, with respect to some countries, equals that of vaccination. In France, the capital and the provinces of which appear less subject to these fatal epidemics than Germany, Swisserland, the Tyrol, Poland, and the north in general, less attention has been given to this discovery, and it has been rejected,—it must be said too lightly, and without any sufficient examination, as may be seen in the article *Belladonna* in the Dictionnaire des Sciences Medicales. I only remember a single observation on this important subject, by Dr. Meglin,* who gives an account of a trial which he gave to this preservative during an epidemic of scarlatina at Colmar, and which confirms all the assertions of the German physicians. The absence of present danger is, perhaps, the cause of this indifference towards a discovery, which, important in itself, might also be fruitful in results applicable to other diseases. At present, however, I shall confine myself to an account of the results which have been ascertained, (by repeated observations, and by a great number of individuals placed in very different circumstances,) without incurring the reproach of having proceeded in a manner not sufficiently rigorous.

* * * * * * *

"The powder mixed with sugar, or the extract made very carefully from the juice of the recent plant, are employed after the following

* *Nouveau Journal de Medecine*, 1821.

formulæ:—Extract of belladonna, three grains, dissolved in an ounce of cinnamon water. Powder, or root of belladonna, two grains, mixed with ten drachms of white sugar, divided into sixty doses. From half a dose to a whole one is given to a child, from six months to two years old, four times a day; to children from three to six years old, from a dose to one and a half; to those from six to nine, two to two and a half; to those from ten to twelve, three, to four and a half. Of the solution, a drop is given for every year of the child's age, once a day and fasting. Observation has shown that, when the epidemic is very fatal, or the intercourse with the patients very frequent and intimate, it is prudent to increase the dose a little. It has not yet been possible to determine, in a satisfactory manner, the length of time which is necessary to eradicate by this remedy, the susceptibility of the contagion. Every thing leads us to believe that the remedy, if used during a time too short to ward off the contagion, moderates very much the malignity of the disease. We know for certain that the remedy does not permanently overcome the disposition to scarlatina; and it is necessary to resume its use on every recurrence of an epidemic. We have always observed that the most intimate communication with the sick does not produce the disease, provided the medicine has been employed eight or nine times previous to being exposed to the contagion, and continued up to the period of desquamation; a circumstance very important to nurses. It appears more certain to begin with rather strong doses, in order to guard against the first impression of the contagion, and to diminish the quantity after a few days. No sensible effect has been observed to follow the continued use of this small quantity of belladonna. Up to the present time, neither season nor locality, nor any other circumstance, has appeared to diminish the preservative effect of this plant."

After remarking that the belladonna does not exercise the same power over miliary scarlatina, he proceeds:—"Do not believe, my learned colleague, that these results have been too lightly deduced, or from a small number of individuals, or from epidemics of little violence. It is from entire provinces,—from cities affected with this terrible scourge,—from epidemics the most fatal, in all seasons, and in localities the most diversified, —on individuals of every age and of every condition, that observations have been made with the greatest accuracy, and have led to the above results."

Belladonna has been long used by CHAUSSIER in cases of rigidity of the os uteri, in the following manner:—Rather more than two drachms of the prepared extract are softened with an equal quantity of distilled water, and incorporated by trituration with an ounce of hog's-lard or simple cerate. In order to secure all the benefit which this means is capable of affording, it is necessary that this preparation be applied directly to the orifice of the uterus. To effect this, he has contrived a small syringe, which, in place of having a pipe, is rounded at its extremity, and has an opening large enough to admit the point of the little

finger. The piston is pulled back a little, then about the size of a small nut of the ointment is introduced at the upper orifice; the syringe is directed by the finger to the mouth of the uterus, the piston is pushed home, and the ointment forced out; being of a soft consistence, it liquefies and spreads over the parts. At the end of thirty, or at most forty, minutes, the os uteri becomes soft and relaxed, to such an extent as no longer to present any resistance to the efforts to dilate it, or to the contractions of the uterus itself. This method was extensively employed by the late Madame LACHAPELLE, and is likewise commended by M. LEGRAND, the present midwife in chief at the Maison d'Accouchement.*

A very elaborate work has been published by Dr. RAPOU, on the therapeutical applications of *baths and vapours*,† in which it is almost unnecessary to say that the "*methode fumigatoire*" is preferred to every other. There are, however, many interesting remarks scattered in the work, and many useful hints with regard to the effects of different medicinal substances, when thus employed in the form of vapour. It would, *a priori*, be natural to suppose that the body would be rendered particularly susceptible of cold by the vapour-bath, but experience has proved, on the contrary, "that when the movement of reaction from the centre towards the circumference is powerfully established, we may be exposed to a very severe degree of cold, without experiencing any disagreeable impression or the slightest inconvenience." Thus it is that the Russians are in the habit of rolling themselves in the snow, the moment they leave an atmosphere heated to a high temperature. The determination to the skin, particularly if the bath has been accompanied by frictions, continues for several hours, and gradually diminishes; and Dr. RAPOU, who has tried the experiment on his own person, very frequently, says that, on quitting the vapour-bath in winter, the cold air always afforded him a degree of pleasure, similar to that which results from a cool breeze in a hot day; and that he "has always been obliged to put on less warm clothing during several days." The general effects resulting from the action of heated vapour on the human body, are more minutely and satisfactorily explained than in any other work with which we are acquainted; and the following may be taken as some of the most important conclusions.

1. "That, in certain nervous temperaments, the vapours of camomile and mint evidently act as antispasmodics. 2. That vapour impregnated with mugwort, wormwood, and rue, applied as a bath to

* *Journal Universel des Sciences Medicales*, 96 cahier.

† *Traité de la Methode Fumigatoire, ou de l'Emploi Medical des dains et douches de Vapeurs.* Par M. RAPOU, D. M. P.—Paris, 1824.

the middle of the body, has always recalled the menses, after all other therapeutic agents had failed. 3. That the vapour of roses has a directly sedative effect, and is of great use in certain inflammatory irritations of the skin. 4. That the vapour of elder-flowers possess the same properties in a much higher degree, and is one of the most powerful means that can be applied to counteract acute pain, or the intolerable pruritus of many cutaneous eruptions. 5. That vapours impregnated with the narcotic principle of poppy-heads, the leaves of the nightshade; dry fumigations with extract of henbane, and more particularly with opium, speedily produce a sedative effect, in cases where other means have been employed without avail; but that, to ensure this effect, the vapour must be employed at a mild temperature. Animal substances seem to have been but little tried by Dr. Rapou, but he has borrowed assistance very largely from the mineral kingdom: among these, we find sulphuretted hydrogen spoken of in terms of high commendation, particularly in cutaneous affections: "directed at a gentle temperature on an inflamed part, it speedily diminishes the pain, redness, and swelling, manifestly moderating the capillary circulation of the skin. Muscular or nervous pains, which obstinately resist other means, yield to its influence, especially if connected with inflammatory irritation: thus, acute, herpetic, and similar eruptions, derive the most essential benefit from it."

We observe that the application of *iodine* in the form of vapour has been suggested, for which, indeed, its volatility would appear to render it particularly proper; but we are not aware of any satisfactory experiments upon this part of the subject.

Some useful practical remarks on *the treatment of obstruction of the bowels*, have been made by Dr. MAXWELL, of Dumfries.* They relate chiefly to the effect of *injections*, variously modified, in administering which, he is of opinion that the patient ought to be placed in such a position as shall allow the bowels to hang "nearly at right angles with the spine." Dr. M. informs us that, by attending to this circumstance, he threw up three and a half gallons of warm water, accurately measured. He regards the general idea, that the valvular structure between the colon and ilium can prevent the passage of enemata, properly administered, is incorrect; and believes, on the contrary, that, in a healthy state of the intestines, any quantity of water may be made to pass from the anus to the mouth. He has found, however, that injections of water are sometimes insufficient to remove the obstruction; in which case, he has recourse to inflating the bowels with air. The first instance in which he tried this experiment is thus described:

"A piece of cork, nearly flat, was placed on a male catheter, at three inches from the point, which was introduced into the rectum.

* *Observations on Constipation, with Cases.* By W. MAXWELL, M.D.—(Edinb. Med. and Surg. Journal, Jan. 1824.)

The patient being placed on his back in bed, and the cork pressed firmly against the anus, the bowels were gradually inflated, the top of the catheter being stopped with the tongue during inspiration. When the air had occasioned considerable distention, it was readily expelled, but nothing followed. Pondering upon my disappointment, it occurred to me that the sudden distention of the colon might press so much upon the ilium, that the air could not enter it. I resumed the operation, blowing slowly, and with the left hand pressing the air forward along the colon into the ilium. When the distention began to give much pain, the air was allowed to escape, and in about an hour it was followed by copious soft stools."

Dr. Maxwell mentions ten other cases in which he employed this plan with success; to insure which, he recommends that the patient should lie on the back, the distention be made gradually, and the air be pressed along the colon into the ilium. In two instances where, from the supervention of symptoms of palsy, it seemed probable that the constipation arose from a paralyzed state of some portion of the alimentary tube, and where the bowels remained insensible to the operation of the usual stimulus of cathartics and enema, Dr. Maxwell employed electricity, by passing brisk and repeated shocks through the abdomen: in both cases the bowels acted, and in one the patient ultimately recovered.

Various cases have recently been published, in which the *oil of turpentine* has been administered with advantage in *purpura hæmorrhagica*. They rest on the respectable testimonies of Mr. Thompson, of Whitehaven,* and Dr. Whitlock Nicholl.†

Some examples of the utility of the same drug in *puerperal fever* have been lately published by Dr Johnson, of Chatterton.‡

The oil of turpentine has likewise been strenuously recommended in the treatment of *neuralgia* of the sciatic and other nerves of the extremities, in a Memoir by Martinet, written expressly on the subject.§ It is maintained that the virtues of the drug reside in the volatile oil, and not in the resin which it contains; that they are unconnected with any purgative, diuretic or diaphoretic effect; but that it acts directly upon the nerve, exciting a sensation of heat along its course. It is recommended to be given in doses of a scruple three times a-day, in some aromatic syrup,—a larger dose is useless, if not hurtful; severity of pain and well-marked exacerbations are the most favourable circumstances for its exhibition; and six or eight days are generally sufficient to effect a cure. Of thirty-six cases recorded by Dr. Martinet, twenty-six were completely

* *London Medical Repository*, November, 1823. † *Ib.* June, 1824.

‡ *Philadelphia Journal*, February, 1824.

§ *Memoire sur l'Emploi de l'Huile de Terebenthine dans la Sciatique et quelques autres Neuralgies des Membres.* (Par L. Martinet, D. M. P.—Paris, 1823.)

cured, seven were relieved, and three only derived no benefit from the turpentine: they were affected with disease of the hip-joint, which proved fatal.

The same physician has likewise published some remarks upon the doses of *sulphate of quinina*, which he recommends to be administered from the commencement in quantities of twenty, thirty, or thirty-five grains.

A case is related by Dr. BEATTY, in which a child of four years old, affected with *ascites*, was cured by the *pyrola umbellata*, after other diuretics had failed.*

"It was, however, proposed, as a last resource, previous to resorting to the operation, that we should try the pyrola umbellata, described by Dr. Somerville in the fifth volume of the Medico-Chirurgical Transactions. I directed an ounce of the plant to be infused in a pint of boiling water for an hour, and half a pint of the liquor strained off, to be divided into six draughts, one to be taken three times daily. The result was such as to exceed the most sanguine expectations: the urine, almost immediately, became natural in appearance, and was increased to three or four times its usual quantity; the alvine discharge, for the first time since her illness, recovered its natural colour and consistence. Her general appearance was sensibly improved, and her spirits began to return."

The volume above referred to contains several examples of *hæmatemesis* successfully treated with *ipecacuanha*, by Dr. SHERIDAN, who says—"These cases, with the two others which I observed in the country, have made such an impression on me, that I never can hereafter hesitate for a moment to have recourse to the ipecacuan emetic in hæmatemesis. I do not mean by this term a mere vomiting of blood, which may be produced by various causes, and in some cases of which emetics might prove very prejudicial, but the true hæmatemesis, which I think will always be sufficiently distinguished by the symptoms which have been above described."

We have now to mention a useful caution with regard to inhaling the vapour which fills the upper part of a phial containing a portion of *hydrocyanic acid*.† A distinguished chemist in Paris, in arranging his laboratory, perceived that a phial, half filled with the hydrocyanic acid of Scheele, contained some dark-coloured flakes, and, conceiving that it had become decomposed, he was about to throw it away. Desirous, however, of ascertaining its exact position, he took out the cork, and applied the phial to his nose. At this instant he was

* *Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland.* Vol. IV.—Dublin, 1824.

† *De la Necessite de ne point trop insister sur l'Usage interieur des excitans dans l'Impoisonnement par l'Acide Hydroganique.* Par M. HELLEB, &c.—(Journal Generale, Mars 1824.)

seized with a great tightness in the chest, and felt three different times successive shocks directed towards the heart; he became pale with general weakness, and a sensation of pricking all over the skin, which ended in stiffness all over the body. This last symptom was particularly remarkable in the legs, which he constantly endeavoured to bend; but he performed these movements so incompletely, that the limbs resumed their former position as often as he attempted to overcome the force which kept them extended. The vapours of ether and ammonia were applied to his nostrils; he was carried into the open air, and every effort made to recall his sensibility. At this time, Dr. Heller having arrived, he found the pulse extremely contracted, and so slow that it only beat thirty-six in the minute. The patient, however, had not lost his perception: on the contrary, he was so much agitated, as to render it difficult to compose him. The skin was rubbed with cloths dipped in ether and hartshorn, and he took half a cup of very strong coffee every half hour. The circulation, notwithstanding, continued oppressed, and the pulse not rising above forty. Under these circumstances, three spoonsful of oil of turpentine were given in the coffee, and repeated twice within two hours. The distress of the patient, however, lasted during the whole of the ensuing night; but next day general lassitude and depression were all that remained. Unfortunately, however, inflammation of the stomach and bowels followed; and he ultimately recovered with great difficulty, and after long and rigorous treatment. The latter part of the evil, however, is frankly attributed by Dr. Heller to the strong coffee and the turpentine, which were so liberally administered, and the impropriety of which he fully acknowledges.

It is rather singular that this accident should have made so little impression on the narrator as it appears to have done; for he goes on to inform us that he went, in the course of last summer, to the Veterinary School at Alfort, where he made numerous experiments with prussic acid on animals affected with hydrophobia; and that, having for some time held in his hand a phial half filled with acid, which had been prepared by Robiquet two days before, he took out the cork, and held the phial under his nostrils. Symptoms followed resembling those above mentioned, consisting in a sense of pricking along the mucous membrane of the nostrils, fauces, and larynx; giddiness, weakness, trembling, and general sense of cold. He was made to inspire ammoniacal vapours, by which he was a little restored, and went into the open air, but retained much weakness and oppression during the rest of the day.

Dr. Heller states, that during two years that he has administered prussic acid to numerous patients, of all ages, of both sexes, and different temperaments, he has sometimes seen de-

bility and slowness of the pulse follow its use in too large doses; and occasionally even coldness of the extremities, and a general numbness or stiffness; but that he has always found frictions with warm flannels steeped in ammonia, exposure to fresh air, and making the patients move about, sufficient to relieve the unpleasant symptoms.

The interesting part of Dr. Heller's paper consists in the important caution to chemists, not to inhale too freely the vapours which collect in the upper portion of a phial which is partly filled with prussic acid. The assertions he makes with regard to the treatment adopted in France and England,—viz. that oil of turpentine is generally given as an antidote, is entirely without foundation. In this country, at least, when an over-dose of prussic acid has been taken, practitioners are accustomed to have recourse to brandy and ammonia, as recommended by Dr. GRANVILLE and Dr. MURRAY.

The *pulvis antimonialis* of the London Pharmacopœia was made the subject of experiment by Dr. ELLIOTSON some time ago, with a view of ascertaining its real effects and proper doses. We are inclined to think his observations have not met with the notice they deserve,—at least, they have not had any influence with those to whom we are indebted for the New Pharmacopœia. Dr. F. HAWKINS, apparently ignorant of Dr. E.'s remarks upon this subject, has published a paper* in which he has arrived at similar conclusions: indeed, he asserts that the effects attributed to this medicine are not to be produced by ten times the usual dose; and he informs us, that he now begins by exhibiting half a drachm at once. One case is mentioned, in which two scruples were given twice a day for several weeks; "no function was in any degree affected by it." In another instance, so much as one drachm was exhibited night and morning, without any sensible effect. It is proper to remark, that Dr. H. procured some pulvis antimonialis from Apothecary's Hall for the purpose of experiment.

SURGERY.

Operative surgery has now nearly achieved all that can be expected from it. The ligature of the aorta, and the internal and external iliacs,—of the subclavian and carotid arteries,—the excision of the jaw,—amputation at the hip-joint,—such are the triumphs of modern surgery; and most of them have now been performed more than once or twice, and some of them ceased to be even objects of much curiosity. We may now, therefore, have leisure to pause over the accounts of these

* *On the Dose of the Pulvis Antimonialis.* By F. HAWKINS, M.D. &c.—(Edinb. Med. and Surg. Journal, April, 1824.)

splendid achievements; the wonder and admiration which they have excited may be presumed to have in some measure subsided, and we may be allowed to inquire whether some of these operations may not be undertaken occasionally upon light grounds; and whether we ought not rather to lament the imperfect condition of a science, that renders such mutilation, and such formidable measures, necessary for the preservation of the patient's life. The ligature of a large arterial trunk implies that we cannot cure an aneurism,—that we neither know how to detect its nascent symptoms, or how to put a termination to its progress. Excision of the lower jaw teaches us that we know nothing of the nature of cancer, and of that class of diseases which are nearly allied to it. We know neither the kind nor condition of constitution most prone to the attacks of this formidable disease; and still less are we acquainted with any remedies that control its advances. Amputation at the hip suggests to our minds many melancholy reflections; for it reminds us of many formidable diseases which we are thereby anxious to get rid of, because we cannot cure them.

These suggestions must necessarily arise in the mind of every surgeon who has passed over the first few years of his practical career, and, although humiliating, they are necessary,—nay, they never were more necessary to be encouraged than at this moment; for the splendour of an operation is apt to dazzle the imagination, and overwhelm the judgment of the young and sanguine, and to turn them from the true object of surgical science—the cure of the disease.

The object we propose by these remarks, is not that of depreciating the value of any of these great triumphs of our art; but it is to repress the ardour that we too often see exhibited by the young surgeon to perform these operations, without due consideration or caution, and to impress upon him the necessity, the humanity, and the superiority, of dispensing with the knife upon as many occasions as possible, and of restricting these severe operations to great and urgent occasions only. We are quite sure that hundreds of arms have been removed from the shoulder-joint inconsiderately and needlessly; and the same mania for the hip-joint operation, we fear, is now likely to produce an equal number of victims to that still more unwarrantable mutilation,—unwarrantable, excepting in some very rare and uncommon instances. On this subject we beg to refer our readers to a late controversial work by Mr. C. Bell, and which we shall have occasion to notice again presently.

The next great operation we have to record is *excision of nearly the whole of the lower jaw*, by M. Lallemand;* and,

* *Journal Complementaire*, Mars.

terrific as the detail of the case is, it presents many points of interest to the surgeon; and we cannot too much praise the presence of mind, and the fertility of expedient, which the operator exhibited under circumstances so alarming. The subject of this operation was a labourer, named Louis Guillot, aged forty-seven, of a robust constitution, born of healthy parents, who had, in the year 1820, three or four red pimples on the lower lip, containing some purulent matter, which was discharged whenever he scratched them; greenish scabs succeeded to these pimples, which, falling off, left ulcerated surfaces, which finally spread and swelled up, and formed a large fungous mass. After two years and a half of treatment which proved unavailing, he came to the hospital of St. Eloi, on the 9th Oct. 1823. The whole lower lip, the chin, and about one inch of the cheek and upper lip of the left side were transformed into a kind of cauliflower growth, the excoriated surfaces of which bled readily, and were covered with an ichorous matter, of a very fetid odour. The neighbouring parts of the cheek were indurated and thickened for an extent of five or six lines round this fungous growth. The slightest touch produced exquisite pain, which sometimes came on without any apparent cause. One of the submaxillary glands was enlarged to the size of a pigeon's egg. The periosteum, felt behind the alveolar border, was thickened and hard. It was evident that nothing but an operation could relieve this man, who readily consented to it; and, on the 11th of October, it was performed in the following manner:

The diseased parts were included within two curved incisions, beginning on the upper lip, six lines from the commissure of the right side to one inch on the left side, and terminating towards the middle of the thyroid cartilage. Very convex above, they encroached upon the sides of the cheek, just anterior to the masseter muscle; below, they were nearly straight, —thus representing, pretty exactly, the shape of a heart upon cards. The arteries, as they were divided, were compressed by the fingers of assistants. On the left side, the tumour extended the whole length of the periosteum to the masseter; a portion of the insertion of which muscle was detached, and the bone was sawed off to within an inch of the angle opposite the interval between the two molar teeth; but the bone could not be entirely separated, on account of the root of one of the teeth, which was obliged to be divided by the chisel and mallet. On the right side, M. Lallemand expected that the saw would meet with no impediment, as there was only one of the molar teeth remaining; but, the stumps of the other being still in the alveoli, obliged him again to have recourse to the chisel. The body of the jaw being then reversed forwards, the soft parts were di-

vided; the portion of the skin of the neck included between the two incisions was then divided; and, just as this was complete, the patient appeared to make great efforts to respire, immediately afterwards sinking from his chair, his head thrown back, and fell on the ground, in spite of the assistants, in a state of insensibility. But, although he still continued insensible when removed to his bed, the blood was pouring forth with violence from twenty vessels; and, therefore, M. Lallemand justly concluded that this was not a syncope. The efforts the patient made to respire induced the operator to think that the pharynx might be loaded with clotted blood; but, on inserting the finger into the mouth, it appeared that the tongue was forcibly drawn to the back of the mouth, and the posterior face of the larynx rested against the vertebral column. The section of the genio-glossus, genio-hyoideus and mylo-hyoideus muscles, their antagonists being undivided, had caused this inversion of the respective situations of the tongue, the larynx, and trachea.

M. Lallemand draws a very vivid picture of the alarming situation in which he was placed. Fortunately he had cauteries heated, and he applied them over the bleeding surface, so as to restrain the hemorrhage. He then extended the incision downwards; laid bare the trachea below the cricoid cartilage, and opened it. In an instant the air rushed into the lungs, the chest became dilated, and the man awoke as if from a profound sleep. Want of space obliges us to be concise in our detail. The wound was dressed with charpie, and drawn together with straps of sticking-plaster. Suppuration was established on the fourth day; on the seventh, the eschars formed by the cautery were separated, leaving a healthy surface beneath; and finally, on the 4th of December, 1823, Guillot was completely cured; there remaining only, of this great loss of substance, a space of two inches between the two extremities of the jaw.

This case, which we have been obliged to abridge, extends through several pages, and, though highly creditable to M. Lallemand, we think it hardly offers any encouragement to repeat so formidable an operation.

M. Mareschal has given us an account of *the extirpation of a fungous tumour of the upper lip*, by M. Roux, in which the ligature of the external maxillary, the right suborbital, and the left coronary arteries, was first performed. The detail of this case is most tediously minute, and is preceded by some reflections upon varicose or aneurismatic tumours, which however present no point of novelty. The patient, a young female, seventeen years of age, was admitted into La Charité, in November, 1823, with a considerable tumour, which had existed eighteen months, on the right side of the upper lip. It was not preceded by any congenital mark upon the skin, but showed

itself suddenly, and did not attract the particular notice of the patient until it had acquired some size. At the date above mentioned, the whole right side of the upper lip and the corresponding cheek, formed a soft tumour, of a violet colour. The edge of this tumour was not well defined on the side of the cheek, so that it was difficult to decide where the alteration of structure terminated. It presented pulsations evident to the eye, and still more so when included between the fingers and thumb. Besides this pulsation of the whole mass, several isolated pulsations, indicating the course of arterial branches over the part, were visible. Compression upon any of the principal arteries of the face produced no change in these appearances; but, if all of them were simultaneously compressed, the tumour was sensibly lessened. Upon this was founded M. Roux's determination of tying the arteries we have mentioned above; after which he proposed to employ pressure upon the tumour, by means of two metallic plates adapted to the shape and size of the tumour, and which were acted upon by a screw, so contrived as to diminish or increase the pressure at pleasure. On the 30th of November the arteries were tied, and the tumour lost all its pulsation, excepting a slight one on the posterior surface of the lip, near its edge. The machine for compression was then applied; and on the sixth day the apparatus was removed, when the lip, the tumour, and the neighbouring parts of the cheek, were found in a state of high inflammation; but which, after some days, subsided, and then it was perceived how much had been gained by the ligatures and the compression, both with regard to its extent, form, and *maniere d'etre;* and, therefore, M. Roux proceeded to complete the cure by extirpation, which was performed on the 15th of January, and the patient was in a state to leave the hospital on the 31st.

We are inclined to think that this case might have been better managed. It is evident that the cases of Mr. TRAVERS and Mr. DALRYMPLE gave the hint to M. Roux for the ligature of the arterial branches; but why was the metallic compression employed? It evidently did no good, and what could it be expected to have done? It brought on pain, inflammation, and very nearly suppuration; and then it was taken away. We think that, in this country, bolder measures would have been pursued than the mere tying the three arteries; at any rate, there could have been no reason to have prevented the excision of the tumour as soon as the supply of blood had been cut off by their obliteration.

On the subject of *syphilis* we have not much novelty to record. Many pages of the Journal Complementaire have, for two or three months, been occupied by the opinions of M.

SIMON on the treatment of this disease: he is a violent advocate for salivation, and full of the old prejudices relating to the disease itself.

Mr. BOYLE has lately published a small volume, the object of which is to recommend large doses of the submuriate of mercury for the cure of the primary symptoms of this disease. This practice is not different from that in vogue in the days of WISEMAN, and more lately of TURNER. For our own parts, we conceive the question as to the propriety of administering mercury in this or that particular case, to be of infinitely more importance than a choice of the form of preparation employed. This we have no doubt about, that, among the poor and the labouring classes in great towns, the profuse exhibition of mercury is more fraught with evil, than one unacquainted with the cases usually met with at the public charities of the metropolis could suppose. Of Mr. Boyle's work we do not wish to speak unfavourably; but we cannot help thinking that it exhibits but a slight acquaintance with the real merits of the mercurial plan of treatment, so freely tried in this country some years ago; and that the facts brought to light by that investigation have either escaped his notice, or not made a due impression upon his mind.

Dr. BALINGALL* has published some remarks on *the carious skull of a person who died of syphilis;* and, since he has never been able to find that mercury has produced carious bones, or other secondary symptoms, in those who have taken that remedy freely for the cure of liver complaints or other diseases, he concludes that syphilis, and not mercury, is the cause of caries. Now, we think a different explanation might be given of this matter. In the first place, is it not possible that there may be some *relation* between the disease (syphilis) and the remedy that calls into action the inflammation and suppuration of the bone? Has Dr. Balingall carefully examined all those cases of supposed syphilitic caries, whether of the bones of the nose, tibia, or cranium, that come before him? and, if so, has he not *invariably* found that these sufferers have *all* taken mercury freely, under circumstances of exposure to weather, or evident derangement of health? Anxious as we are to establish the truth in this important question, and having made it our business to inquire closely into it, we have found hitherto strong reasons for believing that mercury, pushed too far, or injudiciously administered, either with regard to time or situation, has always been the exciting cause of affections of the bones themselves. For example, may not syphilis excite a scrofulous affection of the periosteum and bone? and will not mercury,

* *Edinburgh Medico-Chirurgical Transactions.*

administered freely, under the supposition of this affection being venereal, inevitably produce inflammation and caries of the bone itself?—in which case, though the original taint be venereal, the diseased condition of the bone must undoubtedly be ascribed to the rash and intemperate administration of this remedy.

We have also seen two or three well-marked cases of *eruption*, *sore throat*, and *pains of the limbs*, consecutive upon the liberal exhibition of this remedy in diseases of the liver; and one remarkable case, where a severe *ptyalism* recurred, without any apparent cause, after a cessation of more than three months.

The *lateral operation for lithotomy* has lately found a very able advocate in Mr. KEY, whose treatise is highly deserving of an attentive perusal. The object of Mr. Key's work is to recommend the substitution of a director, which is straight, with the exception of a slight curve near the extremity, and a knife, which is longer than a common scalpel, and slightly convex in the back near the point. The mode of performing the operation with these instruments he thus describes:—

"An assistant holding the director, with the handle somewhat inclined towards the operator, the external incision, of the usual extent, is made with the knife, until the groove is opened, and the point of the knife rests fairly in the director, which can be readily ascertained by the sensation communicated; the point being kept steadily against the groove, the operator with his left hand takes the handle of the director, and lowers it till he brings the handle to the elevation described in Plate III. keeping his right hand fixed; then, with an easy simultaneous movement of both hands, the groove of the director and the edge of the knife are to be turned obliquely towards the patient's left side. The knife, having the proper bearing, is now ready for the section of the prostate: at this time the operator should look to the exact line the director takes, in order to carry the knife safely and slowly along the groove, which may now be done without any risk of the point slipping out. The knife may then be either withdrawn along the director, or the parts further dilated, according to the circumstances I have adverted to. Having delivered his knife to the assistant, the operator takes the staff in his right hand, and passing the fore finger of his left along the director through the opening in the prostate, withdraws the director, and exchanging it for the forceps, passes the latter upon his finger into the cavity of the bladder.

"In extracting the calculus, should the aperture in the prostate prove too small, and a great degree of violence be required to make it pass through the opening, it is advisable always to dilate with the knife, rather than expose the patient to the inevitable danger consequent upon laceration."

We perfectly accord with Mr. Key in his objections to the gorget; and his observations upon the disadvantages of the staff are very strong, and it certainly requires much practice

and considerable *tact* to manage it: yet the success, both of Mr. MARTINEAU and Mr. DALRYMPLE at Norwich, are as great as can reasonably be expected under any mode of operating that can be suggested. We know not why the *lithotome caché* has been so entirely banished from practice in this country. We have seen it frequently employed on the continent with the greatest success. Upon the whole, we are induced to think that the lateral operation performed with the knife and staff, or with the director, as recommended by Mr. Key, comes as nearly to perfection as possible.

One more point, we conceive, this gentleman has explained very properly,—that is, the cause of death after this operation; which, he says, arises generally from suppuration of the reticular texture surrounding the bladder. This serious disease, so often consequent upon wounds and punctures, is frequently overlooked, and has never been explained and illustrated in the manner it deserves.

We have now gone through our catalogue of the most important new publications, and nothing remains for us to notice but the new instruments and machines, which have been lately added to our surgical armoury. This is, however, the most difficult part of our task; since, to describe mechanical contrivances without the aid of engravings, is by no means easy.

Mr. ELDERTON has described, in the Edinburgh Journal, *a new fracture box*, intended to afford permanent and complete quietude in the treatment of compound fractures. This box is constructed to admit either of the horizontal posture, or of any degree of inclination that may be preferred; in which, however, it does not differ from other contrivances of the same kind. Its peculiar feature is, that, on the upper side of the *floor*, as it may be called, twenty transverse grooves are cut, an inch apart from each other, and half an inch deep, for the purpose of receiving a corresponding number of dove-tailed wooden slides. Each slide, which is five inches long, has a hole bored on its upper edge, half an inch in diameter and one inch deep, for the purpose of receiving the rounded tenon of the several perpendicular wooden pins, each five inches long. At the bottom of each transverse groove are bored small holes, a quarter of an inch apart, to receive iron pins and to support the slides; and which, as well as the wooden pegs above mentioned, are driven more or less inwards, to suit the different diameters of the fractured leg. There are also some peculiarities of contrivance respecting the foot-board, which, for want of the engraving, we cannot enter into. The advantage of the above contrivance consists in the surgeon being enabled to dress the wound, or to examine any part of the limb, without subjecting it to motion.

We have two contrivances presented to our notice, for the purpose of *tying deep-seated arteries*. We conceive that Mr. Weiss's aneurismal needle supersedes the necessity, almost, of recording any invention for that purpose; but it is our duty to mention every thing that comes before us, having a claim to novelty. One of these instruments is invented by Professor Jacobson, of Copenhagen; the other by M. Prevost, of Geneva: they are both too complex for mere description, and we can do no more than refer to the plate.*

We have already mentioned† Mr. Weiss's *new dilator for the anus* or *vagina*, upon which occasion we remarked the close resemblance which it bears to an instrument destined for the same purpose, described by Ambrose Pare'. We say this without meaning to detract from Mr. Weiss's merit, since we have no dobt that, as far as he is concerned, the invention is entirely his own; and we cannot too much praise the liberality which that gentleman has shown in putting his invention so unreservedly before the profession.

As the imperfections of any production are in some degree measured by its pretensions, we request our readers to observe, that, in the foregoing paper, we do not profess to have given a complete history of the Medical Sciences during the last six months; but merely a compilation of the most important facts which have come to our knowledge within this period, *and which we have not previously had an opportunity of mentioning.* We adopt this plan to avoid unnecessary recapitulation; and, on this account, we decline noticing either the valuable original communications published in the preceding volume, or any of the works which we have already reviewed.

Observations sur le Nature et le Traitement de l'Hydropisie; par M. Portal. Premier Medicine du Roy, &c. &c. &c. 2 Tomes 8vo. pp. 823. Paris, 1824.

(From Anderson's Quarterly Journal for July, 1824.)

This work of the celebrated Portal, the modern French Hippocrates, is entitled to, and shall obtain, a due share of our attention. Some of our drastic practitioners, indeed, may smile at several of his doctrines and modes of practice: but the opinions of a man who, for the last sixty years, has been consi-

* *Edinburgh Medical and Surgical Journal*, April, 1824.
† *London Medical and Physical Journal*, May.

dered as high authority in medicine, are not to be passed over slightly on that account. And if his practice has been almost uniformly successful, is it the less worthy of being imitated, because he may have occasionally attributed its success to the correction or evacuation of peccant humours? At present, indeed, there seems to be a strong leaning to revive that obsolete notion.

The author considers his work as a mere sketch, which he leaves to some abler man, who may be convinced of the justice of his views, to render more perfect and introduce more generally into practice. He has divided it into two parts: the first treats of dropsy in general; the second of dropsies as they occur in different parts of the body. We pass over the general symptoms and prognosis of dropsy, and the greater part of the appearances *on dissection;* extracting merely that part of the latter, which notices the condition of the blood in hydropic patients.

State of the Blood in Dropsy.—"The quality of the blood observed in the bodies of such persons is by no means uniform; and it is not generally met with in a dissolved state; and we should not believe that all the vessels are at all times empty of blood, a circumstance which authors have often laid down as a constant fact. We have several times found that the white, or lymphatic part of this liquid had firmly coagulated in them, as well as in the cavities of the heart; and that it was even in great abundance there, with but a very small quantity of serum. In some subjects we could scarcely observe any of the red part there, whilst in others, there was much serosity, although the albuminous part was very much concreted. We have not, then, always found the blood-vessels of hydropic patients full of a watery fluid, as some authors have pretended to have done. This, our observations have not confirmed; on the contrary, they have proved, in general, that the blood was in a state of coagulation, and of a black colour in the heart, and in the greater number of the vessels, but more particularly so in the auricles and the *venæ cavæ.* This excess of concretion appears to be owing principally to the albuminous part, which is found, indeed, in a coagulated state in the lymphatic vessels and conglobate glands of many dropsical patients. How interesting would it be, since the examination of hydropic blood gives such variable results, to obtain more accurate information on this subject; to learn what occasions these differences, and whether they have any connexion with the causes of dropsy. We might inquire, for instance, if in dropsy proceeding from suppression of insensible perspiration or of urine, the serum of the blood be in greater quantity than usual; if in dropsy from a scrofulous or venereal taint, the albuminous part of the blood be not coagulated; if, in dropsy from a scorbutic taint, the red part be not lessened, attenuated, dissolved, or if the waters of hydropic patients, when the liver has been injured in its structure or its functions, have not a peculiar character: for example, a greater yellowness or a darker colour than they

have naturally; or whether they are more fluid in petechial diseases, after cutaneous eruptions, &c. Positive information on these different points would necessarily throw light on the nature and treatment of dropsy."—Vol. i. pp. 27-8.

Cause of Dropsy.—M. Portal next inquires what is the immediate or proximate cause of dropsy. It injures, in most instances, the excretions, and not the secretion of fluids; but we know too little of its nature to be able to draw any conclusions from it relative to the cure of dropsies.

"We may say," he observes, "that the secretion, the absorption, and the excretion of serosities, proceed from a kind of sensibility and irritability, the nature and degree of which cannot be defined in the natural state, but which are doubtless the same in all persons who enjoy perfect health; whilst, on the contrary, they are continually varying in a state of disease. But whence happens it, that the secretions of serosities continue to go on, whilst the excretions are diminished or suppressed? This is unknown to us, and probably will be so always."—p. 31.

We are much better acquainted with the mediate or remote causes; and it is upon a knowledge of these, that physicians of the greatest eminence have founded the cure of dropsy. Following their footsteps, and arranging dropsies according to their remote causes, our author has divided them into *thirteen classes*. To avoid repetition, we shall speak of those successively without giving a general enumeration of them.

First Class of Dropsies.—In this class are comprehended those dropsies which have their origin from a deficiency or a superabundance of excretions.

"Those dropsies which arise from a deficiency of insensible perspiration, are of most common occurrence; and this will not appear wonderful, when we consider that of eight pounds of aliment, which we take, nearly five are dissipated in that way, if we include what is lost by expiration. Dropsies from this cause would be even more common, were the diminution of insensible perspiration not compensated for by the increase of some other excretion. If the disease is inconsiderable and recent, and if it is occasioned merely by a simple lessening of insensible perspiration from cold or humidity of the atmosphere, or from some slight affection of the body, it may be easily removed by the prudent exhibition of diaphoretics and sudorifics: for such, in general, is often the most useful practice in incipient dropsy.

"A gentle diaphoresis may be induced by drinking an infusion of the flowers of borage, elder, and wild poppy, or taking a few grains of kermes mineral, or the purified juices of boraginous and diuretic plants; those, for instance, of the leaves of borage, bugloss, pellitory of the wall, and chervil. To six or eight ounces of these juices, from fifteen to twenty-five grains of nitre may be add-

ed, which may be taken in two doses; and if this remedy does not act as a diaphoretic, it sometimes acts usefully as a diuretic. If necessary, we may likewise add to it an ounce of the rob of elder; and if this is not sufficient to excite both insensible perspiration and urine, we may give in addition to it, half an ounce, or an ounce of oxymel of squills. The medicine must be continued for a longer or shorter time. If there is no fever, nor too much sensibility, or irritability, in old people particularly, subject to catarrhal affections, we may sometimes prescribe ptisans of sudorific woods, such as sassafras, sarsaparilla, Chinese smilax, guiacum. The patient should keep in bed for a considerable time, to encourage perspiration, and when he gets up he should be warmly clothed, and should not go out of doors but when the weather is dry and warm. Perspiration may be also encouraged by having the trunk or limbs rubbed with dry flannels."—pp. 34-6.

In the above extract, there is certainly nothing very novel or luminous, but it will give the reader some idea of our author's manner. He acknowledges, however, that these remedies will not cure the patient if there be disease in any internal organ. Dropsy from diminution or suppression of urine is very frequent and it is not uncommon when alvine evacuations are suddenly lessened or retarded. Our author in exemplification of the latter, gives the interesting case of the Countess de B. in which Tronchin and Barthez, in opposition to his advice, suddenly stopped an habitual alvine evacuation, to the great detriment of the patient.

The instances of dropsy occurring after *excessive evacuations* are numerous; and M. Portal gives us the history of several which occurred under his own eye. He seems to have a particular horror at stopping rashly any cutaneous or other discharge to which the body has been long accustomed; and he has not failed to enumerate various cases, in which other practitioners had interfered with his lenient measures, and produced fatal consequences. We extract his observations on the effects of long and copious sweats.

"They first of all," he says, "emaciate the body, and in the end often occasion œdema, and general dropsy or effusions into some cavity. This excretion may be diminished by the use of bitters, and more especially Peruvian bark, which indeed is most proper in the commencement of dropsies after great evacuations. With bitters we have often combined antiscorbutics, nourishing food of easy digestion, and bitter wines; and generally with advantage. In such cases, opiates are for the most part hurtful."—p. 52.

Second Class of Dropsies.—In this class is included dropsy, which occurs during the course, or at the termination of different fevers.

"Sometimes," says M. Portal, "the first of these is so dependant

on the other, that if you cure it, you also remove the dropsy. I have been occasionally so convinced of this, that notwithstanding the presence of anasarca, obstructions of the liver, and even jaundice, which had preceded the fever, during which the dropsy had occurred, I have thought it my duty, seeing the danger of an increase of paroxysms, to prescribe bark instantly, and in a large dose, in order to check its progress. This remedy, as I expected, not only cured the fever, but, instead of deteriorating the causes from which I believed it to proceed (infarctions of the abdominal viscera), it actually assisted in removing them, the patients having afterwards enjoyed perfect health."—p. 53.

Corroborative of this practice, we have the cases of the Marchioness of Vilette, and of the lady of General Clausel, one of whom had a hard tumefied liver, and the other comatose symptoms. The author is desirous that this mode of treatment should be generally known, as it may, he thinks, be the means of saving many lives.

Third Class of Dropsies.—This class includes dropsy from plethora of the blood-vessels, and from the inflammation and suppuration of different parts of the body.

"Dropsy from plethora," says M. Portal, "occurs in a particular manner among plethoric young women, who have difficulty in menstruating, or who, after having menstruated for some time, have their menses suddenly suppressed. It often happens also to women, who, from some cause, have suddenly been deprived of the menstrual discharge, particularly before the time prescribed by nature. It sometimes also takes place in young people, who, after having been long habituated to epistaxis, have the discharge suddenly suppressed without any previous gradual diminution; and particularly when there is no increase of other excretions to prevent plethora and its troublesome effects. Nor are persons advanced in life exempt from it, after the suppression of any considerable hemorrhoidal flux; and several others have become dropsical from a similar cause, either, because the water which formed the dropsy had escaped from the blood-vessels, into the surrounding cellular substance, by the compression which these very vessels, too much loaded with blood, made upon the nerves and lymphatic vessels which accompany them; or in any other unknown manner, sufficient to cause dropsy. However that may be, before the disease makes its appearance, and even after it is fully established, the pulse is full, large, and hard: there is heat in the palms of the hand, in the soles of the feet, and in the face, especially after even a very slight meal, and in the evening as well as in the night time: in such a case blood-letting is very often of the utmost service. At Montpellier, says Sauvages, we have seen a dropsy which was exceedingly aggravated by an abuse of hydragogues and by every kind of diuretic. The patient was not cured till he was put upon a course of whey, and had been bled twenty times.—We do not quote this case as any thing extraordinary; but it ought to be taken particular notice of by those persons (and there is a great number of them) who unreservedly inter-

dict blood-letting in the treatment of dropsy. We confess, however, that several have made by far too much use of that remedy in dropsy; which is no doubt the cause of its having fallen too generally into disgrace, even in plethoric dropsy."—p. 57-9.

Inflammation.—After giving several instances of dropsy, from plethora of the blood-vessels, M. Portal passes to that which is the consequence of inflammation.

"It is," he observes, "extremely common; no doubt because the infarction and induration of the albuminous juices, which are its well-known consequences, occasion a reflux of humours in the collateral vessels, whence it happens that the circulation in them is obstructed, retarded, or suspended, that that part of the serum of the blood which remains in a fluid state is effused into the surrounding cellular texture, and is thence spread into the great cavities, if it does not remain in the seat of inflammation, where it was first effused."—p. 65.

It may sometimes be induced by a neglect of blood-letting. In this kind of dropsy, all heating diuretics are hurtful; and those only should be prescribed, after venesection, which are cooling, relaxing, and slightly nitrous. Those dropsies which succeed to the ulceration of some internal organ are, except in some rare instances, mortal.

Fourth Class of Dropsies.—This class comprehends those dropsies which precede, accompany, or follow eruptive diseases with fever, as well as those without fever, which are complicated with different vitiated habits.

"When we discover any watery swelling of the skin, we ought in general to prescribe diaphoretics and sudorifics, and those diuretics which are found most efficacious in such cases, in order to render insensible perspiration more free and increase the flow of urine. These remedies agree very well in combination. Purgative hydragogues may be employed also, but with caution; for, sometimes a purgative may retard or suppress cutaneous excretions, and check the flow of urine, and delay or even prevent the success of that treatment which is usually the most beneficial in dropsy. In such a case we need not expect a cure, till the flow of urine and insensible perspiration be re-established. Blisters are generally indicated at the commencement of this kind of dropsy, and the sooner the better, when we have found out the cause from which it proceeds or may proceed; and it is better to shift them from place to place, than to keep them running. Their application seldom lessens or suppresses the excretion of urine, especially when the dropsy is fairly formed; the secretions and excretions being then diminished rather by inactivity of the urinary organs than by excess of sensibility and irritability, although the latter may have effect sometimes. When the dropsy is removed, the patient should be put upon a course of antiscorbutic tonics, bitters, chalybeates, &c. To keep up or excite insensible perspiration, dry rubbing night and

morning, over every part of the body, should be recommended.'—p. 75–6.

M. Portal has seen dropsy diminish, and even cease, with a very large flow of urine, or a profuse hemorrhage, as soon as an hepatic eruption had reappeared in the skin; even in cases seemingly of great danger. Dropsical symptoms also show themselves after the too frequent use of *douches*, or sulphureous baths.

Fifth Class of Dropsies.—In this class we find dropsy from catarrhs, and from scurvy, lues venerea, scrofula, herpes, itch, &c.

"In persons of a weakly constitution and in old people, catarrhs are seldom accompanied by inflammation; on that account they last long and are very obstinate; the skin becomes dry, the urine scanty; the ancles, wrists, and face swell, and anasarca is formed by a collection of water in the cellular substance of the trunk and extremities. In the end this water finds its way into one or other of the cavities, such as the head and abdomen, but especially into the chest, because the lungs are themselves primitively puffed up and tumefied by this serum, which very readily transudes across the pleura into the pectoral cavities, or into that of the mediastinum, and pericardium. But sometimes these internal dropsies take place before there be the least infiltration into the texture of the external parts. Several people have died suddenly of dropsy of the chest, mediastinum, or pericardium, without having had any œdema externally; but this is a rare case; for these pectoral dropsies are commonly announced by œdema of the wrists and ancles, which is often succeeded by a slight anasarca of the upper extremities. I have seen some cases which were preceded by an external œdema of one or more places of the chest, and sometimes on the side where the internal effusion is situated. This is the cause of death in many old persons.—Many such cases we might mention: called, in mild rainy winters, to many cases of catarrh, we have seen several of them terminate, sooner or later, in dropsy of the chest, and in patients, who sometimes died of it very unexpectedly; and generally with a rapidity proportioned to the extreme difficulty of breathing and actual inflammation. Even old people are liable to inflammation in such cases; and we should attend to this carefully in the treatment. Taking into consideration, on my arrival, the strength of the circulatory system, if the pulse seemed to me to indicate plethora, I ordered either a blood-letting from the arm, or the application of leeches generally to the anus, but sometimes to the chest, if the patient felt any local pain there. When the hardness and fulness of the pulse were diminished, and the skin had become soft and cool, I prescribed mild emetics, sometimes repeatedly, if the state of the digestive passages seemed to require them; or I ordered them at the very first, if they were not contra-indicated by the state of the pulse. I afterwards prescribed aperients, diaphoretics, or diuretics, and of considerable activity, if the inflammatory diathesis was moderate. The same thing may be said of blisters,

which are most indicated, when it is necessary to increase the action, tone, irritability and sensibility of parts; but which are improper and even dangerous, when the contrary is requisite."—pp. 82-5.

In support of the above doctrines, our author has furnished a great number of cases, which it must be owned are very favourable to his views. In the cure of scrofulous dropsy, he recommends diuretics and antiscorbutic herbs, in conjunction with blisters and antimonial diaphoretics, and if the skin is affected with herpes he uses also the preparations of sulphur, Chinese smilax, sassafras, sarsaparilla, polygala senega, and Virginian snake root. But to be effectual, these remedies must be used at an early period.

We regret that we have not room for M. Portal's observations on scorbutic and rheumatismal dropsy, and the many cases with which he has illustrated them. The first is remedied principally by antiscorbutics; the second by the renewal of rheumatic action on the surface of the body, by the use of mild diuretics and diaphoretics, and, if the pulse be hard and full, by bleeding the patient in the foot.

Sixth Class of Dropsies.—This class includes all those dropsies which take their rise from the infarction and obstruction of organs, and in consequence of other changes. These are a real and very common cause of dropsy.

"Dropsies," our author informs us, "are not occasioned only by obstructions of the internal organs of the head, chest, and abdomen, but also by those of the trunk and limbs in any part of the body. The head and neck, for example, swell, and become puffy from various causes, such as erysipelas, small-pox, measles, and other eruptive diseases, or from oily, fatty, or other external applications. From such causes, air or water are sometimes collected, in greater or less quantity, in the cellular texture. Thus we have seen œdema of the right arm succeed emphysema, in a man whose parotid and maxillary gland of the same side were swelled and hardened. We know that the arms sometimes swell, in consequence of infarctions in the axillary glands; and that, when the inguinal and popliteal glands are similarly affected, there are gazeous or watery swellings in the lower extremities. I was called, in 1804, to visit M.***, by M. Coad, his family physician. The patient was in his 35th year, and had naturally a strong constitution; he was complaining of dreadful pain in the inferior extremities, and in the trunk of the body; occasionally with convulsions and insensibility. It was thought that the pains were rheumatic; and as they were extremely violent, and the pulse was hard and full, blood-letting was practised freely. At the same time, cooling, softening, diuretic drinks were prescribed, and baths, and fumigations, and internal anodynes. The pains abated and ceased for some time, but they afterwards returned with redoubled violence, particularly in the evening and in the night time. They seemed to be intermittent, and to return every two days, with such violence, that the pa-

tient attempted to throw himself out at the window. He was bled against his will; and after the blood-letting and baths, &c., we had recourse to bark in large doses and in powder, without laying aside the anodyne medicines, which, on the contrary, were given in still greater quantity. All our remedies were unavailing; and the pains became more and more excruciating.—M. Coad and I, examining the patient carefully, found a tumour of the size of a nut, on the right side of the neck, placed somewhat anteriorly, and three fingers' breadth above the humeral extremity of the clavicle. It was hard, uneven, and rather painful: we ordered it to be covered with an anodyne and emollient poultice. Meanwhile it increased in size; it became more and more painful, and grew a good deal harder. The glands in the arm-pit also became hard and swelled. The hand swelled, and the swelling extended successively to the fore-arm, the arm, the armpit and the neck, particularly on the side where the tumour was situated. The tumour itself increased in size, and every part of the face became puffy, but more on the left than on the right side; and an emphysema extended over the chest. Meanwhile the pains abated, but debility ensued; the pulse grew weaker, and became extremely slow and very unequal, the breathing was laborious, and the patient died with all the symptoms of hydrothorax. The body was opened, and we actually found much water in both the cavities of the chest; the heart was very large, had its texture much relaxed, with an increase of size in its sides, particularly those of the left ventricle. There was lymphatic infarctions in the mesentery; the axillary glands of the right side were very hard, uneven, red, and disposed to cancer. The brain was hardened."—pp. 121-3.

Diseases of the peritoneum very frequently produce dropsy of the abdomen. Too great a load of fat in every part of the body, is often the cause of general dropsy; and if it is confined to the abdomen, and more particularly to the epiploon, it may produce a fatal ascites. Indeed, when people are very fat, there is great reason to apprehend that they will die either of dropsy or apoplexy. It is well known that dropsy may have its seat in the stomach itself; but physicians have sometimes imagined that organ to be dropsical, when the disease was seated elsewhere.

"A lady," says M. Portal, "from the neighbourhood of Orleans, had often consulted me for different complaints, which seemed to have their seat in the region of the stomach, on account of the severe pain which she felt there, and from her having frequently vomited different kinds of stuff. She came to Paris on purpose, that I might make a more careful examination of her case. She was about 50 years of age, having ceased menstruating only a short while, though rather suddenly. On examination, I could perceive various infarctions in the abdomen, and particularly a hard swelling under the ensiform cartilage, for which I prescribed aperient remedies, and particularly the soap pills, with the bitter extracts and some grains of

calomel, the juices of borage, succory, and antiscorbutic herbs, the mineral waters of Vichy, &c. These medicines were administered for about three months. The patient returned home so much improved in health, that she was thought cured; in fact, she remained well for almost eight years; but having again become a good deal emaciated, and being troubled with colic pains, and having a slight jaundice, she thought proper to come once more to Paris to consult me. Both M. Salmaste and I, on examination, observed a considerable tumour in the epigastric region, which we thought had its seat in the horizontal lobe of the liver; and the tumour at any rate extended into the liver. The patient's skin was yellow; sooner or later after eating, she always vomited her food. Numerous remedies were prescribed for a long time to no purpose; and during their employment, the inferior extremities became so œdematous, and swelled so much, that the epigastric tumour, which before had been prominent, was sunk in the swelling; though it could still be felt on pressure, and gave the patient pain. The body became completely anasarcous. We thought that in a short time an effusion of water would take place in some cavity of the body, particularly in the abdomen, but nature decided otherwise: the patient, after a fever which lasted two or three days, had occasional shivers, and threw up a great quantity of purulent matters mixed with blood. The tumour disappeared; the urine, which formerly had been scanty, became more abundant; and the anasarcous swelling soon ceased. The patient, at distant intervals, still continued to vomit matters of the same description, and also passed them by stool; but this excretion gradually diminished, at length ceased entirely, and the patient's health was re-established." —pp. 135-7.

The author finishes this class with remarks on such dropsies as originate in obstructions of the liver, spleen, womb, mesentery, and urinary organs, which he has illustrated with cases drawn from his own practice.

Seventh Class of Dropsies.—This class includes dropsy which precedes or accompanies convulsive, comatose, or paralytic affections, or which comes after them. Such cases are by no means uncommon. M. Portal gives instances of the two first; and then, speaking of the last, he observes:—

"I have seen a patient become paralyzed in the right half of his body, in consequence of an apoplexy, which had wasted away the palsied limbs. A kind of gaseous swelling afterwards attacked the same side; it was followed by real anasarca, which was lessened, in its turn, by an effusion of water into the head, the forerunner of fatal apoplexy. Such facts had no doubt struck Willis, and other English anatomists, especially Mayow and Glisson, when they affirmed that the brain and nerves are not only productive of the sensibility and motion of the parts, but that they also nourish, by keeping up not only a free and suitable circulation of the humours, but also a proper distribution of nutritive matter in every part of the body. In fact, how is it possible not to acknowledge this last use of the encephalic

and nervous system? and if we once admit it, must it not follow, that when parts are deprived of feeling and motion, the circulation of the humours must be retarded or suspended in them, and the nature of the fluids changed; all which will occasion the stagnation of the fluids in the vessels, and in the cellular texture, and at length their effusion into the cavities? Is this not a better theory than that of Boerhaave and his followers, which, in the business of nutrition, makes the heart and vessels act the principal part, and not the brain and nerves, although it is proved by a vast number of pathological facts, that the latter have a powerful influence in the production of nutrition?

"In this sort of consecutive dropsy, I have recommended with advantage tonic stimulants internally, taken from the class of sudorific and diuretic remedies; and I have sometimes had recourse to blisters of Spanish flies, which, although in other cases they might have injured the excretion of urine, were very beneficial in this, by exciting the brain and nerves, then in a state of feeling much inferior to what they should have been naturally."—pp. 163-5.

The Eighth Class of Dropsies.—This class comprehends dropsy complicated with hysteria or melancholy. Cases of this description are by no means uncommon.

"Mademoiselle de P——," says our author, "in her 15th year, and of a strong constitution, had been for two years affected with an hysteria, well marked by spasms, and involuntary contractions of the muscles of the face and extremities, and by changeable ideas, sometimes melancholy without cause, even to tears, and sometimes gay, without any adequate motive, and accompanied by bursts of laughter. She had never menstruated, and she had a dislike to every kind of food, except such as was acid, and preferring particularly esculent articles of the vegetable class to soups, or an animal diet. This young lady was seized with a flatulent swelling (meteorisme) of the abdomen, at first transitory, but afterwards constant. Several physicians were called into consultation with M. Guindant, her ordinary physician; among these were M. Barthez and I. My advice was, that as the patient was young, stout, and plethoric, she should be bled in the foot, or at least should have leeches applied to the external parts of generation, or to the thighs; and that afterwards relaxing and gentle aperient drinks should be prescribed for her; such as a ptisan of dog-grass root; and leaves of pellitory of the wall, slightly sweetened with syrup of mint, and having a pugil of linden-tree flowers, and a few orange leaves infused in it. I advised also, that fifteen grains of oriental saffron should be added to it. I said I was persuaded that the retardment of the menses was one of the principal causes of the disease, which might end fatally, and that the treatment I proposed, as it was not heating, would be preferable to every other. A contrary advice prevailed: they were afraid that blood-letting by the lancet, or with leeches, would debilitate the young patient too much. It was stated that there were different nervous diseases of this kind, for which musk, myrrh, aloes, and crocus martis aperiens, might be prescribed. Nothing was pre-

scribed at first, but a drachm of extract of hops, with eight grains of Ethiops martis, night and morning, and immediately after it a small tea-cupful of the infusion of mugwort and mint, and moistened with the syrup of bitter orange bark. A good diet was at the same time prescribed, with agreeable and varied exercise. This treatment continued for some time, but so far from being successful, was followed by a considerable œdema of the lower extremities, and an increase of the flatulent swelling, and with pains in the abdomen. In consequence, recourse was had to the treatment which I had recommended. However, the application of leeches to the fundament was preferred to the blood-letting in the foot, which I had desired to be employed in the first instance; but a relaxing treatment was prescribed, both internally and externally, particularly the warm bath to the lower half of the body. The menstrual flux made its appearance, in considerable quantity; the flatulent swelling of the abdomen vanished; the œdema of the inferior extremities at first lessened and then disappeared; the menses again came and continued regularly; in short, the young patient not only did not die of dropsy but was cured of it, got married, and continued to enjoy good health."—pp. 173–6.

The dropsy which attacks persons troubled with *melancholy*, is generally occasioned by abdominal infarctions, especially those of the liver and spleen. In such cases, as there is generally some degree of plethora, leeches should be applied to the fundament; and the juice of such plants, as succory, and borage, should be given internally, and the waters of Chatelden, Seltz, and Victoy, may be prescribed with pills of medicinal soap, extract of wild succory, and soapwort, asafœtida, and if necessary, a few grains of calomel, and even aloes, to re-establish the hemorrhoidal flux, or the menses in women. But a more active treatment may be had recourse to, without troubling ourselves about the cause of the disease, if there is anasarca, or the fear of effusion into any of the cavities. At first, the milder diuretics may be employed; but afterwards, purgative hydragogues, not too active may be of use; and gentle emetics, frequently repeated, often do much good. Our author thinks, that the sudden suppression of the menses is productive of almost innumerable complaints—especially of dropsy, combined with hysterical symptoms.

Ninth Class of Dropsies.—This class comprehends dropsy from pains of different kinds, from teething, and from worms.

"After long continued headache, and very painful ophthalmia and earache, water is often found in the head; and also in consequence of painful teething, by which so many children are cut off, after having suffered violent convulsions. How many instances of this kind I could adduce from my own practice, confirmed by the inspection of the body after death; and what fortunate results could I not specify, obtained by the prompt detraction of blood, either by

the lancet or by leeches, as well as by other remedies, and by a cooling, relaxing, and antispasmodic regimen!—Dropsy from worms, of which some authors have spoken, has been several times preceded by gaseous intumescence, for the most part in children. It is announced by the symptoms of worms, such as cholics, diarrhœa, itching at the point of the nose, dilatation of the pupil, mucous, whitish stool, &c. In that case, various anthelmintics may be prescribed with advantage, the oils in the distilled waters of mint and pellitory of the wall, with oxymel of squills and some grains of Ethiops mineral; and afterwards mild purgative hydragogues, such as castor oil mixed with syrup of buckthorn, and a small cupful of infusion of camomile or wormwood." —pp. 181–2.

Tenth Class of Dropsies.—This class includes dropsy from acrid poisons, violent emetics, or too active purgatives, and from the abuse of spirituous liquors.—General or partial dropsy in some cavity of the body, from such causes, has been often observed; and it is always dangerous, because it is complicated with severe and frequently incurable disease of the stomach and intestines. Our author has many excellent remarks on this subject; but we must restrict ourselves to a very short extract. Milk, particularly that of the ass, joined with the mildest diuretics, seems to be M. Portal's favourite remedy, where acrid poisons or medicines have been the cause of dropsy.

"I am convinced," he says, "that *bile* which has deviated from its natural state, either in quantity or quality, may be considered as one of the most common causes of dropsy: and is not this the case after emetics or pharmaceutical purgatives improperly administered, or after the ingestion of different kinds of poisons?—There can be no doubt, indeed, that when the bile flows freely, in proper quantity and quality, we have none of those eructations, flatulent swellings, crookings, or colics, which precede or accompany dropsy from vitiated bile; and from this may result different medical indications, which should guide us in the prescription of remedies.—When we have reason to fear that dropsy may be the consequence of gastritis, enteritis, hepatitis, &c., we must generally prescribe blood-letting, cooling beverages, baths, mild relaxing anodynes, in liniment or glyster, to prevent the disease; for when effusions of water take place in the abdomen, with a vitiated state of the liver or bile, they are incurable." —pp. 192–3.

M. Portal imagines, that possibly the tremors of the hand, &c. in drunkards, the confusion of ideas and the loss of memory, may be occasioned by the hardened state of the nerves, which is so often observed in the dissection of such persons. For drunkenness he does not pretend to have any cure, but cites the proverb, *qui a bu, boira*—once a drunkard always a drunkard. However, his directions for the cure of dropsy in such persons are judicious, and deserve attention.

Eleventh Class of Dropsies.—This class comprehends dropsy from contusion and severe compression. Such dropsies are not uncommon. We shall give in the author's own words, the following case of one arising from compression, as it relates to an illustrious personage.

"The Prince of Condé, who died at Paris, a few years ago in his 76th year, soon after his return to France, experienced, after severe moral and physical sufferings, a remarkable failure in his state of health; his complexion became yellow, and his extremities were swollen by a marked œdema. His physicians prescribed for him aperient and diuretic remedies, &c., which were indicated, and also some light tonics. He wore dog-skin stockings which were laced very tight. His urine, which was rather scanty, red, and thick, had become less in quantity. I was consulted. I observed in this venerable patient a tendency towards abdominal infarctions, particularly of the liver, with some degree of fever, the pulse being confined, frequent, and unequal. I was told that it was freer in the evening and through the night, at which time he was a little heated and much troubled with sleeplessness. I began with forbidding the use of laced stockings, which making too strong a compression, appeared to me to be injurious on several accounts, which I mentioned; and I said, that old people were very apt to have swelled legs—yet often lived to a great age without any subsequent dropsy. However, I gave my consent that the legs might be bound, but not tightly, with a rolled bandage; which was done only for a few days, for they soon tired of it. I prescribed the infusions of aperient and diuretic plants, with oxymel of squill, nitrous æther, the pills of Bachu, and Bontius, and afterwards a diuretic wine; but this treatment, as well as several other things, were unavailing. The disease made fresh progress, and the strength of the patient gradually failed. There was at length a loathing of food with difficulty of breathing and coma; and the prince terminated his honourable but unfortunate career.—On opening the body, a great quantity of water was found in the abdomen, and also in the chest, cranium, and brain, but less abundant. Obstructions or infarctions were found in the viscera of the abdomen, chest, and brain, and their texture was softened."—pp. 203–5.

In elderly patients of this description, the celebrated Bouvart used to prescribe a long course of antiscorbutics, especially when they were subject to catarrhal affections.

"In old people the tendency to œdema and effusion," says M. Portal, "is singularly favoured by the excessive diminution of nervous sensibility, and of irritability in the heart, blood-vessels, and lymphatics, which is a never failing attendant on advanced age."—p. 207.

Our author's theory with regard to this diminution is something similar to one we have already given, and need not be repeated here.

Twelfth Class of Dropsies.—This class includes dropsy, which comes on, during or after tedious diseases, or from some other causes of exhaustion. When the original disease has been radically cured, dropsy of this kind seldom lasts long; at least in young people. Its prevention requires a long course of diuretics, in conjunction with bitters, chalybeates, and antiscorbutics. Blisters are sometimes necessary. But above every thing, moderate exercise, a suitable diet, some good wine, and in certain instances, a change of scene should be recommended.

"It should be known, however, that both nature and art often cure certain diseases, by starts, or as it were by *fractions*, and at several times; and on this account we often attribute, without reason, the cause of the relapse, to faults committed by the patient in his regimen or otherwise, when the disease, which was thought to be cured, really was not.—But in spite of every precaution, dropsy may take place in some cavity of the body; and what is disagreeable both to the patient and physician, sometimes without any previous warning."—p. 210.

In this kind of dropsy, the author's curative are nearly the same as his preventive measures.

Thirteenth Class of Dropsies.—This class comprehends the dropsy of women during pregnancy and after delivery.

"We have had in our dissecting rooms," says M. Portal, "the bodies of several women who had died at different periods of their pregnancy, and the cause of whose death we were ignorant of, in which water was effused into the abdomen, with infiltration in the broad and round ligaments, and betwixt the peritoneum and the body of the womb. We have also found in considerable quantity effusions of water of a reddish colour and loaded with glutinous concretions, in two ladies who died a day or two after a safe delivery; and who, during pregnancy, had never complained of any thing unusual. In the pectoral cavities, and in the cranium, the same kind of water was met with; and the organs contained in them were in some degree infiltrated. I attributed these appearances to an inflammatory disposition; and since that time in my attendance on pregnant women, I have taken care to have them bled, when there was the slightest appearance of sanguine plethora, particularly at the end of pregnancy; and I am satisfied of the propriety of this practice. Yet it is not generally adopted by physicians and accoucheurs, most of them conforming to the opinion of the public, which is unfavourable to blood-letting. It is a remedy, however, which should not be abused; but without doubt it is the most efficacious of all others in similar cases; but, like most other remedies, it is useful only when properly employed.—Some authors have blamed me for bleeding too little, and others for bleeding too much. Now-a-days that blood-letting by means of numbers of leeches is so much in fashion, I am accused of neglecting it in cases where it might be useful; on the contrary, I am convinced that the partizans of this method do themselves abuse it,

and that they are often wrong in preferring leeches to the lancet."—pp. 215–18.

If the breathing is free, with no tendency to coma, if the pulse is moderate and the skin cool, mild diuretics and laxatives, with the occasional application of blisters, will generally be sufficient; that is, supposing the pregnancy well ascertained, and no symptom present but œdema or anasarca.

"Sometimes," says our author, "even the happiest delivery becomes fatal to the child, and especially to the mother, because the unloading of the uterine and other passages, does not take place so completely nor so regularly as it ought to do. Then the milk, or a humour, which has a greater or less share of it, remains in the inside of the womb, the ovaries, the ligaments, the breasts, and in all the cellular texture of the body in general; for what part is free from it?—This noxious humour gives rise to various ills, very often to anasarca, or internal dropsies, in some organ or some cavity; or at least, dropsies are a frequent consequence of the disorder which has taken place in the excretion of the lochia. As soon, then, as we find women after their delivery show a tendency to emphysema, or slight marks of œdema at the ancles, in the face, &c., we must prescribe for them slightly aperient and sudorific potions, the ptisan of dog-grass roots, of leaves of harts-tongue and chervil, sharpened with sal de duobus, or sal vegetabile, or terra foliata tartari, in smaller doses at first, especially if there is any tension or hardness in the pulse, or we abstain from them if tension or irritation be prevalent, and give nothing but simple potions, which are relaxing and slightly diaphoretic. It will be necessary, also, if the evacuations of the lochia have not been sufficient, and if there be irritation in the abdomen, and some symptoms of plethora, to put leeches to the anus, or to the external parts of generation. We have also, several times, in a like case, made women be bled in the foot, and those who even after their delivery had some appearance of swelling in the extremities. These blood-lettings have had the happiest effects, so much so, that, in a short time after, the patients have had evacuations of blood and serous humours, by the genital passages, by the breasts and skin, which have been very beneficial to them. Sometimes, also, after the bleeding there has been a remarkable increase of urine and stools, a circumstance which proves that plethora was the only cause which opposed their excretion.—In the administration of diuretics, diaphoretics and purgatives, we must always be guided by the intensity of the disease, for what evils do those persons not occasion, who prescribe diuretics and active purgatives, before there has been a certain degree of relaxation. They soon occasion irritation of the organs, and in consequence of this, far from evacuating the humours as had been intended, they retain them in the body, and occasion inflammation there and even gangrene. Aqueous potions alone, whey, or chicken broth, are often sufficient to produce the flow of the lochia, and the excretion of sweats, urine, and alvine evacuations."—pp. 222–4.

We regret that our limits will not permit us to extract more

of the author's remarks on this subject; which are sensible and judicious, though they savour not a little of old doctrines and practices.

Corroborative of the preceding remarks, M. Portal has given a large collection of cases from the writings of the most celebrated physicians, of his own, or former times; to these, he has subjoined the general results of his practice in dropsy, which, as having in a great measure already anticipated, we shall pass over entirely. The first volume is then concluded with a list of pharmaceutical remedies, and a history of several cases of dropsy, which had been cured by nature, accident, or charlatans, after the practice of M. Portal had been attended with no success. These cases are not numerous, and our author deserves great praise for having so fearlessly submitted them to the medical world.

Œdema and Anasarca.—M. Portal begins his second volume, which treats of particular dropsies, with remarks on œdema, leucophlegmatia, and anasarca. These are but different degrees of the same affection.

"In these dropsies," he observes, "notwithstanding their being external, the pulse is for the most part weak, but full and soft, with certain undulations more or less sensible to the touch; the patients have a tendency to drowsiness; their skin is pale, and somewhat yellow or tawny; and the strength is in general debilitated, both with regard to the digestive functions, and the exercises necessary to life."—vol. ii. p. 4.

Œdema, the slightest of the hydropic affections, may be cured, in general, by every thing which promotes insensible perspiration, especially if it has been of short duration. It is not confined to external parts, but is often found internally, particularly in serous and mucous membranes. In opening dead bodies, the author has often found effusions of water in cavities, when there was no external œdema or anasarca; and on the contrary, he has observed the surface of the body œdematous, where the internal parts are all in their natural state.—External dropsies may be seated betwixt the cuticle and the skin, in the skin itself, and under the skin, and in the cellular texture, to a greater or less depth. They often take place after cutaneous eruptions in exanthematous fevers, such as measles, small-pox, erysipelas, &c. The skin appears as if it were disorganized and blanched, and the water, which is in great abundance in the corpus mucosum, elevates the cuticle, and saturates the skin itself.—The corpus mucosum is in a more fluid state than it is naturally, and it is discoloured or of a yellowish hue, and the skin is of a soft or whitish texture; its pores, when they are examined closely, appearing opener than usual, and allowing drops of

water to pass through them, even when they are stretched or pressed in the slightest manner. The cellular texture immediately beneath the skin, contains water which is limpid, yellowish, or of a dark colour, having sometimes the consistence of melted fat or gelatine, or of mucus, and sometimes forming masses of a scrofulous nature, which penetrate into the interstices of the muscles, or their fasciculi, now more or less impregnated with serum. The cellular texture, which is the seat of dropsy, is variously thickened; its threads and plates being sometimes so much so, that they form but one out of many, or more or less dense, its cells are also more or less enlarged, and at least are of smaller number, and of various forms, according to their situation with respect to the surrounding parts. Sometimes the skin, the external mucous texture, and the fat, have acquired a greater thickness and density than is natural to them, and in a remarkable manner, with a greater or less collection of water.

"I have observed that the partitions formed of cellular texture, which are naturally thin, both those which separate the muscles and those which divide the limbs and trunk longitudinally into two halves, had, in some cases, become almost as firm as cartilage. I remarked this particularly, in a scrofulous woman, the one half of whose body on the right side was completely anasarcous, whilst the other was in its natural state. Such are the results of my own dissection; but the reader will find more in Morgagni on the same subject."—pp. 11–13.

In idiopathic anasarca, topical applications are often useful, but never in that which depends upon some internal dropsy.

Hydrocephalus.—The next particular dropsy, taken notice of by our author, is hydrocephalus, on which he has entered at some length; but we must confine ourselves to a few extracts, as the subject has been nearly exhausted by some of our own countrymen. After enumerating the symptoms as they occur, in the three gradations of hydrocephalus, he observes:—

"It is evident that these symptoms have a much longer duration and are much less intense in the *chronic*, than the acute form of the disease, though in both they are of the same nature. And it is doubtless, on this account, that the greater number of physicians, our predecessors, have spoken only of *chronic* hydrocephalus, confounding the *acute* with *true cephalitis*, at the termination of which, they had remarked that water is found in the cranium or brain, as it is found in the cavities of the chest after pneumonia, in the pericardium after carditus, and in the abdomen after the inflammation of different organs contained in that cavity. Such certainly is the reason why the ancient physicians, at least for the most part, have not distinguished chronic from acute dropsy. We believe, however, that for the advancement of the healing art, it is not only far from useless, nay, it is of the utmost consequence, carefully to consider this inflammatory

state, and to attack it with blood-lettings, and all kinds of antiphlogistics, in order to prevent the effusion of water in the head—water which is commonly not limpid but puriform. It will be observed also, that in this acute hydrocephalus, the substance of the brain is in general redder, and that its blood-vessels are fuller of blood. But I must observe, that decided inflammation of the brain may not always end in hydrocephalus. In the present day, however, some physicians are so persuaded that acute hydrocephalus is very frequent, that they admit a particular kind of it, without effusion of water either in the brain or cranium, thus confounding acute hydrocephalus with cephalitis."—pp. 32–4.

Pathology.—M. Portal's remarks on the causes of this disease contain nothing new. But his examination of the brain, &c., after death, has evidently been made with great care, and it grieves us to be able to give only a short specimen of it.

"The water," he observes, "contained in the ventricle is sometimes exceedingly transparent, but it is sometimes, also, as if it were mixed with blood, as it contains filiform concretions of different kinds. Often, although quite limpid, it makes as strong an impression on the tongue as salt water or any other stimulant liquid would do. But if the water is in great quantity, as is generally the case in real hydrocephalus, it is quite insipid. The choroid plexus is often formed by varicose vessels, and sometimes it contains numerous hydatids of greater or less size. Hydatids are also sometimes contained in the ventricles, and unconnected with any other parts, and they are even found in the very substance of the brain, of various sizes. Sometimes there are tubercles containing substances differing in consistency and colour. The cortical substance of the brain is whiter than it is in its natural state, and often it cannot be distinguished from the medullary part. In some cases the brain is so very small, is so much shrunk, and is covered with such an immense quantity of water, that it seems almost to have no existence. It is often so fluid, that its organization appears to be destroyed, or to have been dissolved by the water itself; and this takes place not only in new-born children, but in those who are much older."—pp. 44–5.

The farther the organs concerned in hydrocephalus are removed from the natural state, the greater the quantity of water, and the longer the time it has continued, the more dangerous is the disease, and of course, the more difficult of cure. Even where the constitution is in some degree tainted, a cure may be obtained by the use of appropriate remedies, provided the brain is not disorganized nor the disease old nor intense.

"I have seen children," says M. Portal, "born with symptoms of scrofula, and even lues venerea, and having from their origin a large ill-shaped head, and a strong tendency to hydrocephalus, who have been preserved from it by a mixture of antiscorbutic and mercurial remedies, given for a long time in small doses. I have also seen others whose nerves were treated in this manner, and with so much advantage, that the infants who were threatened with rickets, and had con-

siderable deformity of the head, and some symptoms of hydrocephalus, have been completely cured, the head and the rest of the body having assumed their regular proportions."—pp. 49–50.

Treatment.—With regard to treatment, we must carefully distinguish that which is proper for the acute, from that which should be prescribed for chronic hydrocephalus. In the first case the treatment should be active, in order to cure the cephalitis and prevent the hydrocephalus. We must, therefore, have recourse, almost in every instance, to copious and repeated blood-lettings with the lancet, either from the foot or arm. Afterwards, we may, if necessary, apply leeches to the temples, or neck, or elsewhere, whilst, at the same time, or a little after, we may recommend the employment of emollient, demulcent, relaxing, and anodyne remedies, and the use of sinapisms, or blisters, to the inferior extremities. We might afterwards prescribe various abstergent medicines, according to the nature of the cause to which the disease may be attributed. Sinapisms or blisters to the legs or neck, or even a seton, would be absolutely necessary, if, instead of very severe headache, agitation, sleepiness, and *violent fever*, there were coma, with sluggishness, slowness, and weakness of the pulse. As to the treatment of hydrocephalus, which is the consequence of cephalitis, though often all the symptoms of cerebral inflammation are quite gone, it must be opposed at first by mild aperients, principally diuretics, and afterwards by purgative hydragogues, blisters, sinapisms, &c. We may afterwards have recourse to such alterations as are suitable to the presumed cause of the disease, and with much greater prospect of success, if our knowledge of that cause has been correct. We have experienced the good effects of mercurials in small quantity, especially calomel, given in the dose of from two to four grains, twice or thrice a day for a long time, or of mercurial syrups combined with bitters or antiscorbutics, and with the addition, to each dose, of five or six drops of tincture of squills; but if there be inequality in the pulse, or in the action of the heart, it will be better to employ the tincture of digitalis purpurea, in nearly the same quantity, in one or two spoonfuls of orange-flower water, or in some proper julep. If it be thought necessary, some cupping glasses may be applied upon the spine itself, with or without the application of leeches or scarifications to the tumefied part, according to the urgency of symptoms: setons may also be used and kept open for a longer or shorter time; and even moxa may be applied repeatedly to the head, neck, or spine, and sometimes with great benefit: either by the pain it excites, or the suppuration it occasions, and which may be kept up for a longer or shorter period. If the patient is rather in a state of inertness, relaxation or atony, than in that of irritation, which might indicate more or less inflammation, or

to use the modern phrase *acuity*, those remedies might be prescribed, which may stimulate or reanimate the tone of the cerebral organs, or diminish their infarction, and recall the action of the lymphatic or absorbent systems, at the same time that we prescribe medicines which may increase the secretion and excretion of urine. For this purpose physicians recommend, and with advantage, the decoctions, extracts, tinctures, of rattlesnake, milk-wort, Virginian snake-root, sarsaparilla, Chinese smilax, and gentian; the mildest mercurials, in various forms, externally or internally; juleps, with the waters of parsley, chervil, and aperient roots; oxymel of squills in an infusion of arnica flowers, &c. Pills of extract of hemlock or ox-gall, have also been usefully employed as a vehicle for a few grains of calomel, resin of guiacum, wood-louse powder, &c. *Douches*, with the waters of Baréges, or Balaruc, have been recommended for the spine, especially in *chronic* hydrocephalus; but I never recommended fumigations, as I am persuaded they have been injurious in some instances. When the bones of the cranium separate, or when there is any protuberance of the brain or cerebellum, I need not say that it would be barbarous to make the slightest compression on the head in any manner; and penetrating the cranium with a trocar, as some physicians have advised, can only have fatal consequences. One cannot believe that Le Cat, and other able men, ever could have recommended it.

We have been so lately treating of diseases of the spinal marrow, that we need to say nothing of its dropsy in this place. M. Ollivier seemed to speak with some doubt of the vessels of the arachnoid ever having been seen; but our author says, "the arachnoid, as in hydrocephalus, is also more or less red, its blood-vessels being sometimes very apparent, from the blood which they contain." Neither do we think it necessary to extract any thing from the remarks on hydrophthalmia, or dropsy of the eye.

Hydrothorax.—Hydrothorax, or dropsy of the chest, is next in order, and our author has entered into its consideration at great length. He first enumerates the various places of the chest which are the seat of water, in so far as anatomy has detected them: and he observes that hardly ever any one of them occurs alone. It is a disease not easy of detection; yet authors have not failed to give the symptoms peculiar to each kind of it. M. Portal pretends not to such exactness; but

"The following symptoms," he observes, "especially when they are found in company, are the least equivocal: difficulty of breathing, bloatedness of the face with redness in the region of the cheek-bones, turgescence of the lips, the colour of which is more or less dark or livid; swelling or œdema of the feet and hands, and at length suc-

cessively of all the exterior of the body; the diminution of urine, the sensation of a weight in the epigastric region, and a greater or less swelling of the hypochondria, especially of the right hypochondrium. The pulse is unequal, rebounding, and often intermittent at a longer or shorter period. There is also, frequently, thirst, with cough and spitting of blood or phlegm, or purulent like matter, and with palpitations of the heart, and sometimes a difficulty of breathing nearly amounting to suffocation. Some patients have felt a numbness of the limbs, and even palsy, though rarely, of one or both arms of the inferior extremities, and in short syncope, which at length proved mortal. The dyspnœa is increased by going up a stair or lying horizontally in bed; so that the patient must have his chest and head kept in an erect posture by means of pillows, or he is obliged to remain seated in an easy chair, with his head and chest inclined towards the abdomen."—pp. 92–3.

It cannot be expected that we should follow the author through all the minutiæ of his descriptions; we shall, therefore, merely make a few gleanings. In hydrothorax, the swelling of the wrists, and afterwards that of the arms, precede, in general, the swelling of the lower extremities. Here syncope is not so common as in dropsy of the pericardium, and on that account, patients are oftenest cut off by suffocation. Seeing that the symptoms supposed to form the diagnosis of hydrothorax are so illusory, percussion of the chest has been recommended by Avenbrugger and Corvisart, in order to distinguish by the sound emitted, the true state of its cavity. *Auscultation* by the *stethoscope* has also, as it is well known, been had recourse to; but in M. Portal's opinion, even in the hands of those best acquainted with its use, the stethoscope is only subsidiary to other modes of knowledge in the business of diagnosis. It is with reluctance that we pass over our author's very luminous exposition of the appearances on dissection, and his summary of the causes of hydrothorax, and give merely a few extracts from his plan of treatment.

"As soon," says M. Portal, "as dropsy of the chest is really present, we should think of nothing else, whatever be its cause, but to evacuate the water which forms it. There can be no doubt, that if there be imminent risk of suffocation, we should have recourse immediately, *if it is practicable*, to the paracentesis of the chest. Internal remedies, even if their efficacy were considerable, would be too slow in their operation, to be depended on in such an emergency; indeed we cannot expect much good from them at any time, unless the internal parts of the chest be in their natural state, or so little altered that they can be easily restored to it, a circumstance which is seldom to be expected. But even the paracentesis will afford but a temporary relief, if the internal parts are evidently diseased; but if the dropsy has come on suddenly, in an otherwise healthy person, it may produce a complete cure, if diuretics and other internal remedies be employed

to cause absorption, and the evacuation of water from the chest. After diuretics, the most approved internal medicines are sudorifics and sometimes purgatives; but much cannot be said in favour of any of them. Externally, blisters may be applied to the chest, or moxa, or a seton. But in this disease, more than in any other, every thing must be done quickly, *periculum in mora*. Fomentations and embrocations of different kinds of plants, sharpened with ammoniacal tincture, have also been recommended, and unctions, with mercurial and other discutient, solvent, and aperient ointments; but, in confirmed hydrothorax, these remedies have little or no efficacy. Upon the whole, dropsy of the chest is one of the diseases most difficult of detection in its commencement, when, perhaps, it might be possible to check its progress; and it is only when it is about to end in death, that we can be *almost* certain of its existence; whence it happens that a surgical operation is often not thought of till the patient is in the agonies of death. It should, therefore, be performed as early as possible; otherwise it can do no good."—pp. 118-19.

Dropsy of the Pericardium.—Our author acknowledges that diagnosis of this disease is also extremely difficult, as many of its symptoms are similar to those which occur in diseases of the heart, in hydrothorax, and in dilatations of the aorta. In this disease, diuretics have often been of service; and M. Portal thinks, when the patient is stout, and the pulse full, intermittent, and irregular, with palpitations of the heart, intumescence of the liver, and other symptoms indicating an oppressed circulation of the blood in the brain and lungs, that blood-letting may be employed. In two remarkable cases, he saw good effects from it.

Instead of enlarging on this subject, we shall give, in our author's own words, the history of a case which terminated favourably.

"A milliner, twenty-eight or thirty years old, for a long time subject to infarctions in the glands of the neck and left arm-pit, and also to herpetic eruptions on different parts of the body, had been likewise very subject to obstinate ophthalmia, with œdematous swelling of the eyelids and face. M. Rouland, the surgeon in attendance, treated her with ptisans of the stalks of woody nightshade, and the summits of forest scabious, sweetened with syrup of fumitory. She had also taken, for a long time, the pills of Belloste, and blisters had been used at different times, and for the last ophthalmia, which had been very obstinate, a seton had been inserted into the back of her neck, and with benefit. During the preceding spring the herpetic eruptions, which were much more distinct than formerly, continued; but six months afterwards, in the summer of 1815, the patient was seized with cough and difficulty of breathing; and she complained of great thirst, which was no ways lessened by the demulcent drinks prescribed for her. The action of the heart was much stronger than natural, and irregular. There was also a remarkable pulsation in the carotid arteries, particularly the left; the pulse had intermitted ever since the menses had become scanty, and there was a remarkable

tumour in the left hypochondrium, which seemed to be occasioned by the spleen pushed down into the abdomen by the left wing of the diaphragm. The left hand, the wrist, and the fist, were, in some degree, œdematous; but, for a short time past, the left arm had been enormously swelled by water infiltrated into its cellular texture. So rapid a progress of the disease, joined by increased dyspnœa, was very alarming, and the more so, that the corresponding side of the chest soon became œdematous. The heart was affected by a kind of tremor, and the difficulty of breathing was extreme. The patient meanwhile, could lie only on her back, a little more inclined to the left than the right side. The urine was scanty and dark-coloured; the face dark, particularly the region of the cheek bones; the pulse was slower than it is naturally, and large and unequal, but not hard. Such was the state of the patient when M. Rouland called me to see her. I found her in danger of immediate suffocation, unless something were done instantly to relieve her. From the symptoms, I suspected that dropsy of the pericardium was the predominant disease. I advised the application of a large blister to the region of the chest, corresponding to the heart, and at the same time, fifteen leeches to be put to the external parts of generation, and to the thighs. I prescribed a mixture to be given in spoonfuls. It consisted of two drachms of gum ammoniac, one ounce of oxymel of squills, and four ounces of distilled water of hyssop; and to each dose, four or five drops of the tincture of digitalis were added. The blister very soon produced a considerable discharge of serum, and the leeches furnished a copious discharge of blood; and, favoured by these remedies, the mixture procured a progressively increasing expectoration. The breathing was now easier; the urine became more abundant and clearer; and there was also a discharge from the bowels, which was kept up by glysters, prepared with a decoction of dog-grass roots and wall-pellitory leaves, and three drachms of mineral crystal, and two ounces of mercurial honey. In this way, not only was the progress of the disease stopt, but the patient placed in a much better state. In order to prolong the discharge of serum, externally, and to facilitate the evacuation of water from the pericardium, I recommended the establishment of a seton upon the chest opposite to the left lateral part of this cavity a little in front, towards the place where the pericardium forms a somewhat rounded angle, to lodge the apex of the heart. I prescribed at the same time pills of calomel, squills, and digitalis, with a diuretic potion, to be continued for a longer or shorter time; and this treatment had the happiest effects. The urine continued to flow abundantly, the bowels were open, the breathing became easy, the pulse regular; and the patient was cured of a dropsy of the chest, to all appearance seated in the pericardium."—pp. 145-8.

The author has given another case where his practice was equally successful.

Ascites.—The name of Ascites is generally given to that dropsy in which the water is contained in the cavity of the peritoneum; but, in abdominal dropsies, the water is not always effused there; hence, instead of one *true ascites*, there are seve-

ral *false* kinds of it; and those on account of the prognosis and treatment it is necessary carefully to distinguish. We need not, however, follow our author on a subject so well known.

"Besides those causes which are common to all dropsies, and of which we have already spoken," says M. Portal, "there are others peculiar to dropsies of the abdomen; most of them affect that cavity generally, or some one or other of its viscera, such as jaundice, colics, diarrhœas, dysenteries, sanguineous plethora of the abdominal vessels, the frequent inflammations of the abdomen in general, or those particularly of the peritoneum, stomach, intestines, liver, spleen, mesentery, kidneys, bladder, womb, &c. These inflammations are sometimes indicated by pain, acute fever, and other intense symptoms; but much oftener they are so obscure, that the patients suffer too little to complain of them, and hence the physician is ignorant of their existence; but even then, the inflammation is no less real, although *latent*, a thing which unfortunately often happens, especially before ascites.—Amongst the local and frequent causes of ascites, we must include different obstructions of the abdominal viscera; as of the liver, spleen, and mesentery; most commonly from scrofula, herpes, itch, lues, scurvy.—It may be occasioned also by falls, or blows which may have struck upon the abdomen, or by strong compression of that cavity; or by the abuse of wine or spirituous liquors, or by unwholesome food, or by living in a damp situation," &c.—pp. 168-9.

The prognosis is generally unfavourable; but if the disease has come on suddenly in an otherwise healthy person, if the paracentesis be resorted to immediately, and followed up by suitable diuretics, if the waters discharged by the operation be clear or yellowish, if a flow of urine come on, and the patient gain strength, there is some prospect of a permanent cure. In no complaint is discernment in the choice of remedies more necessary than in this; and in none do we find the effects of remedies so variable. In by far the greater number of cases, our author has found the paracentesis but a palliative remedy; but nevertheless he recommends its use.

On the subject of hydatids he is very copious, and gives that division of them which we have already given in our analysis of M. Poilroux; but as the whole is little better than a compilation, if we except a few cases, it is needless to extract any of it. It is valuable, however, as the compilation of such a man.

Uterine Dropsy.—Here the author has made many valuable remarks, most of them the result of his own practice; but we can only spare room for his observations on the mode of cure.

"The treatment of this disease," he says, "is difficult, because frequently its existence is unknown, not only when it commences, but even when it has reached its last stage, at which time it may be complicated with diseases of the neighbouring organs, and very easily be confounded with them. And we cannot at first know, whether the

water is contained in the womb itself, or in cysts and hydatids, &c.—In our treatment of the disease, all these circumstances should be taken into consideration. As in this kind of dropsy the menses are very often suppressed, it is a matter of much consequence to know whether or not the woman is in a state of pregnancy, as the two states are not incompatible with each other.—We inquire carefully into the causes of the disease, and combat them by appropriate remedies; we next take into consideration, the state of the menstrual discharge: it may sometimes be very abundant, and during the intervals there may be an efflux of a serous fluid. We must always ascertain by the pulse, and other circumstances, whether or not plethora is present, and if so, we should make use of blood-letting in preference to every other remedy, if the woman is not pregnant. It is only when the symptoms of plethora are obscure, that we should restrict ourselves to the application of a few leeches to the anus or groins. After blood-letting, the menses very often reappear, if they have been previously suppressed, or become regular, if they were otherwise. After blood-letting, we prescribe demulcent and gently aperient drinks; and thus, by the evacuation of the water, we have cured dropsy of the womb. In addition to the above, we may give mild tonics, if the constitution of the patient can bear them. I have seen astonishingly good effects from a diuretic wine, which is prepared with a handful of wormwood, half as much chervil, half a drachm of nitre, and a pint of Chably white wine: the dose is three liqueur glassfuls in the day.

The treatment must be very different when the patient is in a weak state of health; for instead of blood-letting we must prescribe tonics, particularly chalybeates or diuretics, and tonic unctions with diuretic tinctures. Mercurials are also sometimes useful, particularly if there are hydatids; and if any obstruction exist in the womb or in the vagina, our treatment must be directed to these parts. When the water has been evacuated, we may, in order to put a stop to its recurrence, if the parts are sound, and not in an inflamed state, inject into the cavity of the womb a stimulant liquid, which may induce both its contraction, and that of the orifices of the serous excretories; and for this purpose M. Percy has used with complete success an injection, consisting of three parts of water saturated with salt, and one of vinegar. We may also use injections, with wormwood, mint, and such plants, or with bark and mercurial preparations."—pp. 255-8.

From M. Portal's observations on hydromphalus, hydrocele, and dropsy of the joints, we might have made an extract or two, but our limits compel us to stop short. We must observe, however, that after the history of each particular dropsy, there is a collection of cases from the most respectable sources, which are calculated to throw light on the preceding history.

In the review which we have now given of M. Portal's work, we have studied, as far as possible, to make the author tell his own story; being fully aware that so eminent a writer needed not the adventitious aid of a journalist to set him off. The work is extremely valuable, and though, in perusing it, we have

met with repetitions, and not a few truisms, naturally enough occurring in the work of such a veteran author, yet are they lost in the multitude of original remarks which are scattered through the volumes.

M. Portal appears to be a believer in the humoral pathology, and several of his doctrines are obscure, but as his practice is founded on a patient observation of nature, it is not likely to mislead. He constantly inculcates, that medicine is valuable only when it is properly administered; and to obtain this is the most difficult of all points in practice. His remedies, in general, are mild and chiefly vegetable, and to be useful, they must be continued for a long time; and he informs us, when changed by other physicians for those of a harsher nature, that death has often been the consequence. This is saying a great deal; but it must be allowed, that in the present day, vegetable remedies, particularly in their fresh state, are too much neglected; and we believe that the fresh juices of plants, and mineral waters drank at the fountain's head, have virtues which neither of them possess in their dried or crystallized state.

In our author's company we are introduced into much genteel society, princes, dukes, marquises, counts, and barons; and his cases are interesting, not only in themselves, but as being connected with some of the most eminent physicians of France. He writes, generally, in a style of great amenity; but he complains that his discoveries have been attributed to other men—many of them his own pupils. Indeed, he refers often to his own works, with all the partiality of an aged parent; and his *ego ipse* not unfrequently stares us in the face. He has spoken, however, in terms of high commendation of many of the older English authors, and of no one more highly than Mead, whom he always styles the learned Mead; and yet this is the man, the friend of Boerhaave, and the intimate associate of Freind, whom Dr. Thomson, the chemist, has spoken of, as having enjoyed an ephemeral, and consequently an undeserved reputation. Portal seems to know little about the present state of medicine in Britain, at least he has not deigned to panegyrize our Armstrongs and other *great men*, who, no doubt, would have felt gratified by his praise.

Traite des Convulsions chez les Femmes enceintes en travail et en couche, Mémoire qui a remporte le prix proposé par la Société de Médecine de Paris, pour l'année 1820. Par Antoine Miguel. Paris, 1824. 8vo. pp. 164.

(From Anderson's Quarterly Journal for July, 1824.)

This is an ingenious and animated treatise on a very interesting subject. It is, indeed, not remarkable for the novelty of its

matter; yet, as it inculcates many points of practical utility, with great perspicuity and eloquence, we need make no apology to our readers for giving them some account of its plan and execution, and for presenting them with a few of its most striking passages.

The work consists of four chapters and an appendix: the first treats of convulsions in general; the second, third, and fourth, are dedicated to convulsions, as they occur in pregnancy, during labour, and after delivery; and the appendix supplies some additional matter, which should have been inserted in the body of the work. The doctrines and practice contained in the three last chapters and appendix, are confirmed by a number of cases, selected from Ballonius, Mauriceau, De la Motte, Levret, Lorentz, Malacarne, Coutouly, Bouteilloux, Girard, &c.

Convulsion and Spasms.—Tonic and clonic convulsions, or spasms and convulsions, in the opinion of our author, differ only in degree.

"The Greeks," he says, "confounded these two states under one name (spasmos), and it is only by means of subtle and arbitrary divisions that the moderns have been able to separate them.—By what means are we enabled to prove that the nature of two diseases is the same? Is it not by the examination of their seat, their cause, their symptoms, and their treatment? If then, all these circumstances are the same in the two cases, is not the attempt to distinguish them or make them different diseases useless? The seat of convulsions is very evidently the same as that of spasms; both are seated in the muscular fibre, wherever it is found, and in that alone. The identity of seat naturally supposes the identity of cause. There is some difference, indeed, in the symptoms; sometimes there is but a slight contraction, an evanescent shiver; sometimes the contractions are severe and frequent, followed by relaxation; and sometimes the contraction is violent and lasting, and presents but indistinct intervals of repose or remission.

"But what proves that these varieties of convulsive affection are but different degrees of the same disorder, is this, that they are even met with in the same circumstances, and under the influence of the same causes; for they are observed, almost always, after large wounds, great operations, very severe fevers and excruciating pain; and that they naturally pass into each other, and are intimately blended in the greater number of cases. Tension and stiffness often announce convulsive movements, and these in their turn sometimes precede tetanus. Who can determine the time a permanent contraction should last, not to be conclusive? I do not know that this has been ever done, nor do I see any practical utility that could result from it. We may be told, that, in the treatment of spasmodic diseases, this distinction merits every attention; but Ballonius and Cullen thought otherwise, and they were

no ordinary practitioners; and we have but to read the works of the most esteemed physicians to be convinced that the treatment generally recommended rests upon the same foundation, is regulated by the same indications, and requires the same remedies. A class of antispasmodic medicines has been established, but it has never been divided into two orders, the one destined to oppose spasm, and the other convulsion."—pp. 7-8.

The author divides convulsions into two kinds, the one comprehending those of the voluntary, the other those of the involuntary muscles. The first kind he calls *external*, the second *internal* convulsions; but there is also a class of convulsions, compounded of these two, which he has named *mixed*.

Causes of Spasmodic Disease.—He now enters upon the consideration of the immediate cause and the nature of convulsion, and makes some remarks on that state of the human frame which is most favourable to the production of spasmodic diseases; but as there is nothing very uncommon in his speculations on these subjects, we shall pass them over entirely, and give the reader merely the result, as summed up by the author in the following propositions:—

"The intervention of the brain or of the spinal marrow is necessary to produce the convulsions in the first order, or of the voluntary muscles.

"The brain may be affected directly or indirectly, and hence convulsions are idiopathic or sympathetic; this division should likewise be extended to convulsions of the involuntary muscles.—Convulsions are favoured by a particular state of the brain and nerves, by plethora, the sympathies of organs, &c.—The involuntary muscles are not subject to any general law with regard to the production of those convulsions which affect them."—pp. 22-3.

Convulsions of the Pregnant State.—We now turn to the convulsions which occur during pregnancy. These are no more a disease *sui generis*, than puerperal peritonitis is an inflammation of a different nature from ordinary peritonitis. But the parturient state modifies, in a striking manner, the influence of their causes and their mode of treatment; and it is of much consequence that the practitioner of medicine should study these modifications. All those causes which are capable of producing convulsions at any time, may equally produce them during pregnancy; but then those causes are much more powerful, because they are, in some sort, aided by a special permanent cause, which it is impossible to remove; and that is pregnancy itself.

"What is it in reality," says our author, "which constitutes pregnancy? It is the existence of a fœtus in the organ destined to preserve it. What is the most striking phenomenon of pregnancy?

It is, certainly, the growth of this new living principle. This growth necessarily supposes an excess of life: the woman who furnishes its materials must then enjoy a state of more active vitality than formerly; and this of itself is a circumstance eminently favourable to the production of convulsions; and experience, which confirms this theory with regard to children, renders its truth still more evident in the case of pregnant women. This activity is first of all shown in the womb, which is the organ appointed for this function; very sensible changes are taking place in its physical and vital properties; its substance becomes softer and more spongy; its sensibility becomes greater as pregnancy advances; and the irritability with which it is endued is so clearly exhibited, that M. Deneux has no hesitation in putting it on a level with the contractility of muscular organs. By this increase of vitality additional energy is given to the sympathies of the uterus, already so numerous and so various. Consider how keen is the general sensibility of woman at this period of life; the least agitation, the least shock, the slightest impression, whether physical or moral, very readily deranges the natural equilibrium of her system; her physical constitution becomes softer and more relaxed than in its ordinary state; all its textures are moistened with fluids which soften them, and the fibres seem to lose their firmness, that they may be able to undergo the necessary distention: but this particular disposition and flexibility of parts, if they are still in a sound state, are far from indicating any debility of the system; they are but a state of body necessary for the growth of the fœtus at the expense of its mother. But it is not this laxity of textures which increases the irritability of the muscular fibre; these two phenomena coincide, but they do not depend upon one another; they are the immediate effect of the increased activity of life.

"It is to this activity alone, that the greater part of the phenomena which are observed during pregnancy must be attributed. It is through it that the nerves receive vividly both internal and external impressions, that the brain reacts with vigour, and that the muscles obey its impulse with a correspondent energy. This cause, which is manifested externally by a greater degree of nervous sensibility, is no less evident internally; as may be proved, provided the body is in a healthy state, by the strength and liveliness of the pulse, and the activity of digestion. It has been said that the intellectual faculties are weakened; and although a statement of Larrey's proves the direct contrary, we may easily explain this phenomenon, when it exists, by showing that the concentration of vitality upon a particular organ necessarily occasions a degree of weakness in some of the other functions. It is the womb which is here indisputably the central point on which all the organs react, and it is thence that all the sympathetic irradiations take their departure, that go to communicate to all the systems the feelings of the uterus, and to subject them to the powerful influence under which that organ is itself placed, until a fixed period.—From this sympathy a great number of diseased actions spring, more or less

dangerous, according to the parts affected or the nature of the diseased action. One of the most frequent of these is convulsion, and the influence of the uterus may produce it in every part where there is muscular fibre. The uterus itself, formed of a substance, the texture of which appears different, but of which the functions are not at all equivocal, is evidently muscular, and this circumstance gives additional energy to its reaction. The stomach, the diaphragm, the heart, the external muscles, all participate in the particular state of this organ. Continually stimulated by the body which it encloses, continually in action on account of the important function which it fulfils, it may be considered, without risk, as in a state of permanent irritation."—pp. 24-8.

We have ventured to extract the whole of the above passage, as it will convey to our readers an accurate idea of our author's manner, and impress strongly on the mind what cannot be too well known. We may observe, however, before quitting this subject, that the sympathy of the uterus is often productive of beneficial consequences.

Causes.—The causes of convulsion during pregnancy, are now treated of under the heads of plethora, hemorrhage, distention, and irritation of the womb, abuse of sexual intercourse, errors in diet and regimen, and passions of the mind. Plethora, the first of these, has been regarded from the earliest times as a powerful cause of convulsions; and its opposite state, inanition, has been regarded as no less so by Hippocrates and Galen. The latter indeed has made use of this strong expression; "Ego in convulsione tertiam causam præter inanitionem et repletionem nondum reperi."

In the pregnant state, also, nothing is more apt to produce convulsions than improper food, or even the abuse of that which is of the most wholesome quality.

"At every period of life," says our author, "spirituous liquors are contrary to the temperament of woman; but it is more particularly in pregnancy that their effect may prove fatal. Nothing perhaps produces convulsions with greater certainty than drunkenness; women of a certain rank, indeed, are not exposed to it; but even with them the inconsiderate use of coffee produces effects, which are in no respect less fatal. This beverage, extremely stimulant, irritates the nervous fibres, the sensibility of which has already been much increased by pregnancy; so that irritability of the stomach, excitement of the heart, agitation of the muscles, and sleeplessness are its ordinary effects. We may thus judge if coffee is as fit for pregnant women as its very general employment would argue it so to be."—p. 36.

Of all the passions, anger is oftenest attended with bad consequences; sudden and long continued laughter, may also produce convulsions; and hatred, jealousy, sorrow, may have the

same effect, in different degrees, or may bring on premature labour.

Independently of the above causes, convulsions in our author's opinion, may be attributed to imitation; for in an hospital, when a pregnant woman is seized with convulsions, it is no uncommon thing to see several other women in similar circumstances attacked in the same manner. Such is the fact, indeed; and M. Miguel thinks it more philosophical to assign it to imitation, than to a certain constitution of the atmosphere.

Partial or General Convulsions of Pregnancy.—The convulsions occurring during pregnancy may be partial or general; and the first of these may be divided in the manner we have already mentioned. External partial convulsions belong to the face, trunk, and limbs.

"Even," says our author, "in her best state, there exists in the physiognomy of a pregnant woman, an alteration which it is impossible to define, but which is known at once by people of experience. This change which takes place in the features, and particularly in the lips and chin, indicates a very marked sympathy with the uterus; and if this sympathetic influence becomes morbid, the particular state of the muscular fibre which occasions it, easily degenerates into convulsions. This may affect all the muscles of the face, and give rise to those singular distortions, vulgarly named grimaces, the infinite number of which defies description."—p. 41.

But we must not follow the author in his account of these partial convulsions, among which he includes cramp and chorea.

Internal partial convulsions are those of the heart, stomach, intestines and uterus, of which M. Miguel has given a short, but accurate description. Speaking of the latter, he observes, that we ought to consider as uterine convulsions those contractions which, for the most part, without any known cause, occur during pregnancy; and which, commonly are the forerunners of abortion.

Vomiting, cough, and hiccup, are placed under the head of mixed partial convulsions.

"Almost from the first moment of conception," says M. Miguel, "the stomach seems to be a sharer in the new sensations of the womb; nausea, which is but an attempt at vomiting, commences; vomiting soon follows; and this sensibility of the stomach is, to the vulgar, and often to the physician himself, the only mark that pregnancy has taken place."—p. 49.

Cough is often very troublesome, and is not always free of danger. Never, in any case, is there a mucous or purulent expectoration, unless the patient be affected with catarrh or some organic disease of the lungs. Hiccup is rarely dangerous, but becomes very troublesome when it is prolonged; and sometimes

it is so fatiguing that it occasions vomiting. M. Miguel knew a woman who was troubled with it during the three last months of pregnancy, but who felt no more of it after her delivery.

"General convulsions," says our author, "are sometimes preceded by the partial ones which we have now been considering. But at other times they attack the patient without a single precursory symptom, without any local disturbance, in short without any prelude which might make their appearance dreaded. In ordinary cases, however, dull pains, considerable anxiety, tingling of the ears, dazzling of the eyes, deep sleep, starting of the limbs, a sense of something creeping on the skin, a feeling of oppression, a sensible difficulty of breathing, precede the invasion of the fit. The pains, particularly the headache, in a short time increase, the eyes have a wild expression, the patient becomes blind or deaf, consciousness is lost; the functions of the brain cease, the limbs are agitated by convulsive motions; then the breathing becomes noisy, and the mouth and nostrils are filled with foam, the eyes roll in their sockets, the agitation of the muscles is extreme, the spasmodic locking of the jaw, the grinding of the teeth, the noise and oppression of the breathing, the violent beating of the carotid arteries, the tumefaction of the jugular veins, the involuntary ejection of the urine and fæces, the distortion of the trunk, the swelling of the face, the projection and enlargement of the tongue, altogether present a spectacle truly terrifying. After this state has lasted for a longer or shorter time, the woman falls into a profound sleep or stupor. The breathing becomes more tranquil, but it does not return to its natural state; the memory and other faculties of the mind remain suspended, and the patient is still blind and deaf. A new fit commences, the same phenomenon are exhibited, and the convulsions, thus renewed a great number of times, leave the woman without sense, and almost without life, for several successive hours or even days. When the attacks are so frequent and so violent, the woman generally sinks under them; but labour in the mean time comes on, and the life of the fœtus is even in greater danger than its mother's. Besides abortion, which is then the ordinary effect of these violent convulsions, the affection of the brain which produced them, rises sometimes to such a height as to occasion hemiplegia, or even apoplexy. But it is not at all times that general convulsions present such horrible spectacles, or are attended with such danger."—pp. 53–4.

The most frequent cause of general convulsions is plethora, particularly in the vessels of the brain; but very often there is no external symptom indicative of cerebral congestion. The brain, however, is always affected, but the cause of its being so, is beyond our reach. The partial convulsions which occur in pregnancy, are oftener sympathetic than idiopathic, while general convulsions are more frequently the effect of local congestion, than of sympathy. General convulsions the author calls neither apoplexy nor epilepsy, nor hysteria, but merely the effect of cerebral reaction, which in different individuals may be infi-

nitely varied, from an involuntary chill to the most violent epilepsy or tetanus.

Prevention.—With the view of warding off convulsions, the physician's whole attention must be directed to nervous irritability and plethora. The first may be remedied by tranquillity of mind, by antispasmodics, by moderate exercise, and a well regulated diet; but if the second is present, we must have recourse to blood-letting, which is then the quickest, the surest, and the most beneficial remedy that can be employed; and in this all practitioners agree. It abstracts instantly a most powerful stimulus, and relieves the brain from a state of strong excitement, and modifies general sensibility in a striking manner. It is of most use against general convulsions. During pregnancy, a woman has been bled ninety times. Such examples, says M. Miguel, should not assuredly be imitated, but they show to what an extent blood-letting may be carried, and how easily blood is reproduced in pregnant women.

Prognosis.—The prognosis in this disease is formed from the age of the woman, the place of her abode, the period of her pregnancy, and the kind of convulsion by which she is attacked. When the woman is not young, when she is the inhabitant of a crowded city and near her time, and when the convulsions are general, there is always great danger.

Treatment.—We need not enlarge on the curative means to be employed in partial and general convulsions, as they are well known; but we may remark, that almost in every case, the favourite remedy of our author is blood-letting, most others with him being merely accessory to it. And when there are signs of sanguineous congestion in any of the principal organs, he very properly reprobates the use of opiates; but where cerebral excitement is present without congestion, the tincture of opium, in combination with some mild and agreeable antispasmodic, may be administered with great advantage. In such cases, M. Miguel recommends highly a combination of camphor and opium. Emetics, he disapproves of. When, after the fit, the woman remains comatose, he advises the use of blisters to the back of the neck, the thighs and arms. Cupping and scarifying, he thinks are too seldom employed. The application of cold water to the head in congestion is a rational practice, but in mere nervous excitement it may be attended with the worst consequences.

Puerperal Convulsions.—Speaking of the convulsions which occur during labour, our author observes that labour itself very frequently induces them; 1. by the effect of the partial and general contractions which it renders necessary; 2. by occasioning the blood to be regurgitated towards the head and into the minutest vessels of the brain; 3. by the sympathetic effect of pain,

which affects all the nervous, and consequently all the muscular system. In the second case, the convulsions are idiopathic; in the first and third, sympathetic. We regret that our limits will not allow us to transcribe M. Miguel's very vivid picture of the phenomena of labour, pp. 89–90. Besides labour itself, every thing that is capable of thwarting the contractions of the womb, of retarding the birth of the child, or occasioning efforts beyond those which are naturally necessary, must increase the tendency to convulsion, and may be regarded as one of its causes. In such cases, which it would be waste of time to enumerate, the contractions of the womb very speedily become morbid; and consequently general convulsions frequently attend them.

"Compare," says M. Miguel, "all the observations of those authors who have spoken of convulsions that come on during labour, and you will almost always find that the birth of the child had been delayed for some time by an obstacle which opposed its passage, and that the labour had been languid for some hours. I do not say that it is always the case, but it happens often enough to justify the connexion which I have pointed out betwixt morbid contractions and convulsions. If their identity is not acknowledged, it must be allowed that they have a great resemblance, and that if we wait for the appearance of the first, we almost always run the risk of meeting with the second." —pp. 95–6.

Prognosis.—In these convulsions our prognosis rests upon the same ground as in the former.

"If they have not commenced," says our author, "before uterine contraction has taken place, we may be able to prevent them by appropriate remedies. For this purpose, blood-letting, repeated according to circumstances, will prevent the bad effects of plethora; emollient and mucilaginous lotions, unctous liniments, &c., will diminish the rigidity of the parts; change of position of the fœtus, when it is practicable, will prevent the inconveniences of a preternatural presentation; and by rendering the delivery more easy, these means may be regarded as prophylactic or preventive of convulsions. Even when the convulsions have begun, these means ought on no account to be neglected, as they may remedy the cause which produced and keeps up the convulsive action. But in spite of these remedies, it often happens that the convulsions continue, without our being able to assign any cause for their existence but the labour itself of parturition; and it is only by putting an end to it, that we can save the woman from the violence of a disease which threatens her with death."—pp. 99–100.

Treatment.—Several authors have taught, that when convulsions make their appearance during labour, we should have recourse immediately to artificial delivery, but others have been unwilling to establish this as a general rule. Artificial delivery

they think, should never be employed, but when the efforts of nature are altogether unavailing.

"If," says M. Miguel, "when labour is complicated with convulsions, the appearance of the patient, the flushing or lividness of the face, the fulness of the vessels, the strength of the pulse, the throbbing of the carotids, &c., indicate a state of plethora, we must have recourse instantly to blood-letting, from the arm or the jugular vein if possible, or, if that cannot be done, we must apply leeches to the fore part of the neck, to the temples, or behind the ears; and these remedies must be repeated or not, according to circumstances. It is in such a case as this, which is the most common, that frequently washing the head with cold water, cupping and scarifying the back of the neck, and using acrid and irritating glysters, are of decided benefit. If, on the contrary, the paleness of the face, the brilliancy of the eyes, a small confined pulse and clear urine, give evidence of irritability of the nervous fibre, without cerebral congestion, a state much less frequent than the preceding one, we must employ baths, opiates, antispasmodics, anodyne glysters, musk, camphor, and asafœtida; then also sinapisms and blisters to the feet, legs, and thighs; and if such a state be occasioned by violent pain, originating in laceration of the womb, ulceration, &c., we must place our chief dependence upon opium."—p. 102.

We think it needless to follow our author on the subject of artificial delivery, but we extract the following passage, as it investigates a very interesting question.

"Hitherto," he says, "we have supposed the orifice of the womb sufficiently dilated to permit the exit of the fœtus, or at least capable of being so far dilated as to allow the hand to be introduced into the inside of its cavity. This condition is essential to every kind of delivery. But there are cases, and particularly during the continuance of convulsions, when the orifice of the uterus resists equally the exit of the fœtus or the introduction of the hand. It would seem that there the uterine fibre itself is in a state of spasm, or tonic convulsion, which confines it and shuts its orifice. It resists the finger which attempts its dilatation, and it would be ruptured, sooner than be dilated. This constriction of the orifice has for some time attracted the attention of practitioners, and an operation has been proposed to remedy it."—pp. 107–8.

When the usual remedies have failed, an incision has been made through the edge of the orifice, and it has succeeded. On this important subject we may subjoin some observations of M. Chaussier, which our author has inserted in his appendix.

Belladonna.—"Various considerations," he says, "determined me to seek some milder and more rational method of cure; and as henbane and belladonna, when applied to the eye, occasion the dilatation of its pupil, I had some hope that a preparation of these plants might have the same effect on the orifice of the uterus. For this purpose,

about fifteen years ago, I got a pomatum made of henbane, and another of belladonna, and gave some of it, with the instrument necessary for using it, to Madame la Chapelle: and she informed me that she had always found it very serviceable in difficult cases of rigidity and resistance of the orifice, or of the uterus, or even of the vulva. Madame Legrand has also employed it several times, and always with great success. This pomatum consists of eight *grammes* of good extract of belladonna, diluted with as much distilled water, and rubbed up with thirty-one *grammes* of simple cerate or purified hog's lard." —pp. 163–4.

This pomatum is applied to the os uteri and its circumference, by means of a syringe of a peculiar construction; and generally in about thirty or forty minutes after the application, the orifice of the uterus becomes so much softened and relaxed, that it presents no longer a resistance of any kind. (See also Anderson's Journal, Vol. i., page 323.)

M. Miguel attributes the convulsions which occur after delivery to hemorrhage, clots of blood, wounds, laceration, or contusion of the womb, errors of regimen, suppression of the lochia, abuse of purgatives, and passions of the mind. We give his remarks on hemorrhage, as being by far the most interesting of those subjects.

"It occurs oftenest," he says, "after delivery. When an animal is bled to death, it dies in convulsions. At the moment when life departs, all the great muscles are agitated with irregular movements, and as there is no way of restoring to the vessels the blood which has been taken from them, it is impossible to recall to life animals thus deprived of blood, when the quantity of that fluid which has remained in the vessels is not sufficient to excite those organs, the functions of which constitute life. Thus the hemorrhage which is followed by convulsions in women who are pregnant, or in child-bed, is almost constantly mortal. Here, the convulsions do not cause death; they are merely a phenomena attending the last moments of life. The cause of this phenomenon has been sought often. M. Baumes attributes it to a deficiency of tension in the vessels which brings on a relaxation of the whole system; but how can a relaxation, a deficiency of tension, give rise to the most lively and energetic contractions? Leroux, of Dijon, looks upon convulsive syncope as a preservative effort of nature; and this opinion, which Ballonius had previously entertained, has been adopted in the present day by M. Broussais; but to me it appears liable to many objections. Were I to choose an hypothesis, I would rather have recourse to the mode of negative excitation of Bichat; for it must be acknowledged that there is a change of state in the condition of the brain. This change produces a vitiated action, but this action cannot last long; for the sudden absence of the ordinary exciter, an absence which has been able to occasion irregular movements, cannot support them like the exciter itself, which is certainly renewed. This impression not being renewed, it is full but for a moment, and then is instantly dissipated, unless there be still a

quantity of blood sufficient to support that relic of vitality which is just upon the point of being extinguished."—pp. 128-9.

But we must stop here, for at every step we move farther our author becomes more and more obscure; and at last ends the subject with saying that he knows nothing about the matter. By internal hemorrhage, at this period, is generally meant extravasation of blood, or its accumulation in the cavity of the uterus; but such hemorrhage may also be occasioned by the rupture of a blood vessel in the abdomen or chest, from the exertions made during labour. In all these cases, convulsive syncope is generally followed by death.

The same kinds of convulsions may come on after delivery, as those we have already mentioned; but they happen much more rarely; indeed seldom any other but hysterical or epileptic women are attacked by them. When they occur to other women, they are generally the sequel of convulsions which have preceded labour, or appeared during its continuance. In all cases, the remedies are nearly the same. Our author's remarks on this subject are sensible and perspicuous, but they are not new. However, we shall transcribe his concluding paragraph.

"In all cases," he says, "we must pay attention to the strength of the patient, to her original temperament, to the obstacles which have occurred during labour, to the time which has elapsed since delivery, and in short to the phenomena of the secretion of milk, and of the excretion of the lochia, which necessarily take place. Here the accoucheur enters upon the general domain of medicine, and the rules which he has to follow, do not belong more particularly to his own art, than to any other branch of the healing art; which proves that midwifery is not purely mechanical, and that to exercise it with success, the accoucheur must join to manual dexterity, the most profound knowledge of physiology, dietetics, and therapeutics."—p. 148.

We have thus finished our review of M. Miguel's work. The author has a clear head, and he draws pictures of disease admirably, and in a very lively and interesting manner. Puerperal convulsion, however, seems to be his hobby, and when he once gets on it, he is apt to continue there longer than may be agreeable to the generality of readers. Notwithstanding this, he is a most agreeable writer; and we hope that he will soon throw the fascination of his manner over some other practical subject.

On the Detection of Minute Quantities of Arsenic in Mixed Fluids. By ROBERT CHRISTISON, M. D., F. R. S. E., Fellow of the Royal College of Physicians, Edinburgh, and Professor of Medical Jurisprudence in the University of Edinburgh.

(From the Edinburgh Medical and Surgical Journal, for July, 1824.)

It is well known that the presence of various mineral vegetable and animal substances in fluids which contain arsenic, alters considerably the action of its liquid tests; and that their effects are occasionally so much modified as to supply no proof whatever of the existence of the poison. Toxicologists have attempted to get rid of these inconveniences by making allowance for the modifications alluded to, or by removing the causes in which they originate; and some of the processes devised for these ends (if we may judge from their having obtained a place in every recent work on Medical Jurisprudence) are now held to form a necessary part of the medico-legal investigation of cases of poisoning by arsenic.

Having had occasion to repeat and vary the experiments, on which the proposed processes are founded, and having obtained results by no means conformable with those stated by authors, I was led to undertake a general inquiry into the whole subject of the detection of arsenic in mixed fluids. And I am not without hopes, that a summary of the chief facts which have occurred to me will be acceptable to medical jurists, in so far as they may correct some errors and oversights in authors, which have not hitherto been recognised, estimate fairly the value of the analytical processes recommended by different chemists, and introduce more precision and greater simplicity into the investigation of the more complicated cases of this kind of poisoning.

In the remarks I have to offer, I shall confine myself chiefly to the effect of vegetable and animal substances on the action of the tests. The modifications produced by such mineral substances as may exist in conjunction with arsenic, considered as an object of medico-legal inquiry, have already been fully ascertained by the labours of several distinguished experimenters, and ought to occasion no difficulty in the detection of the poison even to a person of but moderate practice in chemistry. But it is not so with matters belonging to the two organic kingdoms. The researches of Rose of Berlin, of Orfila at Paris, and of some other experimenters of less note, have shown, that the precipitates caused in arsenical solutions may be kept dissolved, or may be materially disguised by the co-existence of animal or vegetable principles. And the difficulties thus created are even more serious than the researches of these authors lead us to

imagine. For their experiments have been confined in a great measure to simple fluids and infusions; whereas it will be shown in the sequel, that the more compound mixtures of them in daily use, as articles of food or drink, give rise to far greater embarrassment; and, indeed, affect the precipitates so much as to render most of the liquid tests absolutely useless. The inutility of the tests will be also farther shown by a fact, to which former experimenters have paid but little attention,—namely, that the very same precipitates are often produced in these composite fluids, whether arsenic be present or not.

It has been thought by some, that the inconveniencies now mentioned may be removed by destroying the colour of the liquid in which the poison is dissolved; and in this expectation several decolorizing processes have been proposed by chemists, and adopted in all works on Medical Jurisprudence. These processes I have investigated with some care, and if I mistake not, I shall be able to show, not only that such means are inadequate to accomplish the end in view, namely the restoration of the true colour of the precipitates; but likewise, that some of the tests will notwithstanding indicate arsenic where none exists, while others will fail to detect it where it does exist, nay, that a person who follows faithfully one of the processes recommended, may in some circumstances fail altogether to discover the poison where it is nevertheless present in considerable quantity. Other more complicated processes have likewise been suggested, with the view of transforming the oxide of arsenic into a different compound of the metal, and destroying at the same time the whole vegetable and animal matters originally present. These processes too have been a good deal relied on, and perhaps fully more than their accuracy and delicacy will justify.

In the following inquiry I shall examine, *first*, the changes in the action of the arsenical tests produced by the presence of various compound nutritive fluids; *secondly*, the value of the plans proposed for decolorizing such fluids, with the view of restoring the genuine action of the tests; and, *thirdly*, the utility of certain complicated processes for developing the poison, when it is so intimately united with organic substances, as not to be discoverable by the common re-agents.

In my experiments, I have confined my attention to mixtures containing the arsenic in small proportion, namely from two grains to a quarter of a grain in the ounce, or in round numbers, from a 250th to a 2000th part of the mass. These extremes will include by far the greater number of arsenical fluids which occur in the practice of Medical Jurisprudence. Besides, in solutions more concentrated than the strongest of those I have chosen, the action of the tests approaches pretty

nearly that observed in pure arsenical solutions; and in the least concentrated, the indications (except by a single test only) are so obscure, that it was quite needless to examine those in a state of still greater dilution.

Section First.

When the oxide of arsenic is dissolved in mixed animal or vegetable fluids, its liquid tests become inaccurate on four accounts. Sometimes the colour of the precipitate, although in reality not altered, appears to be changed, because it is viewed through a medium of a different colour; and this fact is essentially important, because the operation of the test may not only be disguised, but also even imitated where no arsenic exists. Thus the blue precipitate, thrown down by the fixed alkalies in sulphate of copper, may resemble the arsenite of copper, if it floats in a yellow-coloured fluid. On this subject, some good observations are to be found in the treatise of Paris and Fonblanque on Medical Jurisprudence. (II. 247.) These gentlemen however have dwelt too strongly on this source of fallacy; for much more frequently the precipitate thrown down from an arsenical solution is really changed in colour, because animal or vegetable matter has been thrown down along with it. There is not one composite liquid, of all those I have examined, in which lime-water causes a white precipitate with arsenic; it has always more or less of a yellow or brown tint. The precipitate produced by the ammoniacal nitrate of silver has also generally a brown or black colour, which, in the stronger arsenical solutions, succeeds in a few seconds the proper yellow tint of the arsenite of silver, and in the weaker is struck immediately. Nay, even the sulphuretted hydrogen, which is less affected than the rest, instead of a bright sulphur-yellow precipitate, causes one with a shade of white, green, or red; at the same time it often decolorizes the fluid; and the precipitate, when dried and reduced in a tube, always exhales the fetid odour of burning animal or vegetable matter. Thirdly, the tests may be inaccurate in their indications, because the precipitate is kept suspended. Lime-water is much exposed to this inconvenience; for the arsenite of lime is lighter than the other arsenites, and consequently, in fluids containing sugar, mucilage, albumen, caseïn, and the like, it is kept long in a state of suspension. Lastly, the tests may fail altogether, because the precipitate they cause with arsenic is soluble in the vegetable or animal principles of the fluid, and therefore does not separate. Lime water and the nitrate of silver are partially liable to this inconvenience; and the ammoniacal sulphate of copper for the same reason scarcely ever affords any indication whatever. This is

owing, as Rose of Berlin first proved, to the arsenite of copper being very soluble in tannin.

These statements are supported and illustrated by the following experiments. The fluids employed were strong Broth, made with beef, barley, greens, and salt, Tea with sugar and cream, Coffee made in like manner, Porter, Port wine and Milk. The only tests I have thought it necessary to use are those in commonest use—the Lime-water, the Ammoniacal Sulphate of Copper, the Ammoniacal Nitrate of Silver, and Sulphuretted Hydrogen.

Lime-water.—In filtered Broth (which is hazy and of a very pale straw-yellow colour), Lime water darkens the colour, and causes a slight increase of the haziness. If one-fourth or half a grain of arsenic exists in each ounce of the broth, the effect is not different; if a whole grain is present, the cloudiness is considerably greater, but the precipitate remains in suspension. In Coffee, (which after filtration is faintly translucent, whitish and opaline) lime-water causes transparency, but no other change. If the coffee contain from a 2000th to a 500th part of its weight of arsenic, scarcely any difference is observable in the effect of the test; a very faint haze merely being produced in the strongest solution: but if the proportion of arsenic be a 250th part, a pretty considerable, yellowish-brown flocculent precipitate is formed. In strong Tea, made with abundance of sugar and cream (which also is translucent, whitish and opaline after filtration), lime-water causes transparency, and deepens the colour, but has no other effect. If arsenic is present in the proportion of half a grain to the ounce, a haziness ensues, and in some hours a scanty yellowish-brown cloud falls to the bottom. This appearance is of course more distinct, when the proportion of arsenic is greater. In Porter, heated to expel the carbonic acid, lime-water causes a copious flocculent precipitate, of a pale, dirty yellowish-brown colour: if it contains two grains of arsenic in the ounce, the effect is not different, except that the precipitate is somewhat more abundant. In Port wine it causes a copious, smoke-gray, flocculent precipitate: if the wine contains two grains of the oxide in every ounce, the precipitate is nearly the same in quantity, but dirty reddish-gray in colour. In Milk it has no other effect than we should anticipate from the necessary dilution;—if arsenic be present to the extent of two grains in the ounce, the effect is not different.

Hence it is clear, that in animal or vegetable fluids containing a moderate proportion of arsenic, Lime-water is totally inapplicable as a test, because it sometimes produces no precipitation at all; at other times causes the same precipitate, as in an arsenical solution, although no arsenic be present; and

never throws down the arsenite of lime of its characteristic white colour.

Ammoniacal Sulphate of Copper.—The ammoniacal sulphate of copper turns filtered Broth to grass-green, without causing any precipitation. If arsenic be present in the proportion of a 500th, 1000th, or 2000th part, it has no other effect immediately; but in six or eight hours a minute yellowish-green precipitate falls down. In Coffee the same test causes a yellowish-green colour, and no precipitate. If arsenic be present, the green tint of the colour predominates; but no precipitate is caused though two grains be dissolved in each ounce. In Tea it causes an intense opacity and a deep smoke-brown colour, but no proper precipitation; when arsenic exists in the proportion of a 250th or 1000th part, the colour partakes more or less of green, but no true precipitate is formed. In Porter it produces a copious deep leek-green precipitate, which becomes dingy on standing. If arsenic be added, even to the extent of a 250th part, the effect is precisely the same. In Port wine it causes a dark-brown opacity, from which a copious greenish-brown precipitate slowly separates. The presence of two grains of the arsenical oxide in each ounce causes no difference. In Milk it strikes a beautiful azure blue colour, but causes no precipitation: in the weaker solutions of arsenic in milk it has the same effect; but if the proportion be one grain to the ounce, the colour passes in a few hours to dirty celandine-green; and if the proportion is double, this tint is struck at once; yet in both cases without any obvious precipitation.

The ammoniacal sulphate of copper is therefore quite as inapplicable to these fluids, as lime-water; for it sometimes causes no precipitate where arsenic abounds, and at other times, when no arsenic is present, occasions a precipitate very similar to that which it produces in an arsenical solution.

Ammoniacal Nitrate of Silver.—The ammoniacal nitrate of silver causes in filtered Broth an abundant cream-coloured precipitate; which, on the addition of nitric acid, is changed to snow-white. The effect is not in the slightest degree different, if arsenic be present to the extent of a grain in the ounce. In Coffee it occasions a pale chesnut-brown precipitate, passing in two or three seconds to deep grayish-black. If arsenic be dissolved to the extent of two grains in the ounce the immediate effect is the same; but the change of colour takes place more slowly; and the rapidity of the change is inversely as the quantity of arsenic. In Tea it occasions a reddish-brown opacity, so intense that it is not easy to say whether a precipitate is formed or not; but none falls down. If arsenic be present, an abundant precipitate forms, which in the weaker solutions is chesnut-brown, passing rapidly to deep grayish-black, and in

the strongest has a brownish-yellow tint, and undergoes the same change much more slowly. In Porter it produces a copious dirty grayish-yellow precipitate, passing in two or three minutes to deep grayish-black. If arsenic be present in the proportion of two grains to the ounce, the precipitate is greenish-yellow, but as permanent as that thrown down in a pure arsenical solution. In Port wine this test causes a copious precipitate in intermixed white and brown streaks, becoming immediately brownish-black, and after some hours chesnut-brown. When two grains of arsenic were present in every ounce, the precipitate was at first dirty-white, but passed very slowly, through ash-gray to dark sienna-brown. In Milk it causes an imperfect coagulation, and renders the colour more purely white: if arsenic exists in the milk even in the proportion of a 2000th part, the tint verges on yellow, being in the weakest mixtures cream-white, and in the strongest sulphur-yellow; but the precipitate remains always suspended.

Thus, then, on arsenic, dissolved in coffee, porter, broth, or port wine, this test has scarcely any other effect than it has on the same fluids, when no arsenic is dissolved in them: in tea the precipitate is materially disguised in colour; and in milk it is kept in suspension. Consequently, notwithstanding the restless and unwearied anxiety shown of late by some to uphold its excellence, the indications it gives are no more to be trusted in such fluids, than those of the two former re-agents.

Sulphuretted Hydrogen.—A stream* of sulphuretted hydrogen gas passed through Broth, Coffee, Tea, Port wine, or Milk,† has no effect, whether acetic acid be previously added or not;‡ neither has it any immediate effect on Porter; but a very scanty dirty reddish-gray precipitate is afterwards deposited on the application of heat. In Broth, containing only a 2000th part of

* Most authors recommend, that the sulphuretted hydrogen, when used as a test for arsenic, be previously dissolved in water; and this mode of applying it seems at present to be generally preferred. A stream of the gas acts with equal delicacy, possesses the advantage of not diluting the solution, and is much more convenient; for, as its solution in water cannot be kept for occasional use, it must be prepared afresh each time it is required.

† On heating milk deprived of its coagulable matter by acetic acid, and then impregnated with sulphuretted hydrogen, a dirty-grayish flocculent matter is separated. With this phenomenon, however, the test has no concern, as it takes place equally though no gas be previously transmitted. It takes place, in fact, because the acetic acid cannot coagulate the whole of the caseïn in the cold.

‡ Before applying this test to arsenical solutions, it is necessary to add acetic acid to them, provided an alkali exist along with the arsenic, otherwise no precipitate takes place. Phosphate of soda has the same effect as an alkali, probably on account of the excess of soda it contains; but in this case, too, the action of the test is perfected by the previous addition of acetic acid to the suspected fluid. Hence the acid is often requisite in animal and vegetable solutions, as they frequently contain an excess of alkali.

arsenic, the gas first strikes a bright lemon-yellow colour, and, in less than fifteen minutes, a precipitate falls down—copious, flocculent, and of the same bright lemon-yellow colour. If the quantity of arsenic be greater, the precipitate has a sulphur-yellow tint, and is thrown down at once. In Coffee the same test produces, with a 2000th part of arsenic, an abundant grayish-yellow precipitate, becoming bright lemon-yellow on the application of heat; and the precipitate is at once struck of this colour, or sulphur-yellow, if the proportion of arsenic is greater. In Tea it likewise causes a copious lemon-yellow precipitate, with a 2000th part of arsenic; but the tint is not characteristically bright till the fluid is heated; with a 1000th part the tint is at once a full lemon-yellow; with a 500th part sulphur-yellow. In porter, which contains a 2000th part of arsenic, it occasions a grayish-yellow milkiness, which, on the application of heat, becomes an abundant dingy chesnut-brown, and flocculent precipitate. If the quantity of arsenic is greater, a dingy lemon-yellow precipitate is thrown down at once; and its colour is somewhat brightened by the application of heat. In port wine, containing a 2000th part of arsenic, the precipitate is a reddish-brown, with a 250th part orange-red. In milk containing a 2000th part of the oxide, and deprived of its cheesy matter by acetic acid, the gas produces a dingy lemon-yellow cloudiness, which, on the application of gentle heat, becomes a flocculent precipitate of the same colour; if the proportion be greater, the colour is sulphur-yellow; if it be a 250th of the mass, the precipitate is thrown down at once without the aid of heat.*

It is hence apparent that of all the tests the sulphuretted hydrogen is by far the most accurate, or rather the only one at all useful in composite animal or vegetable fluids; that its action on arsenic is neither imitated nor prevented, and sometimes not materially modified, by any organic principle existing in these fluids: and that it is sufficiently delicate for all medico-legal purposes, since it acts (and in general characteristically,) on arsenic, when dissolved in 2000 parts of the most complicated and deeply-coloured fluids. I have not thought it requisite to determine the limit of its delicacy in such fluids, because I conceive the medical jurist will have scarcely ever to search for the poison, when it exists in a state of greater dilution. I may

* In these experiments with milk, care was taken not to raise the heat much above 150°, for then the portion of caseïn, which the acetic acid could not thrown down in the cold, was deposited in such quantity as to obscure greatly the colour of the precipitate. I may add, that milk not deprived of its cheesy matter, although it contains a slight excess of acid, possesses some solvent power over the sulphuret of arsenic; a stream of the gas causes scarcely any perceptible yellowness, unless the quantity of arsenic exceeds a grain to the ounce; yet, when the acetic acid is dropped into such a mixture impregnated with the gas, it becomes at once bright yellow.

mention, however, that I have often found the indications of the test distinct, and always procured some precipitate when the arsenical oxide was dissolved in 8000 parts of the most complex fluids. I shall afterwards show, in the Third Section, how the sulphuretted hydrogen may be employed, so as to yield, without the assistance of any other, the most decisive and unequivocal proofs of the presence of arsenic in almost every possible case.

The foregoing statements, however, establish, beyond all doubt, the inadequacy of the fluid tests for arsenic, when it exists in moderately diluted solutions, along with vegetable or animal principles. For of the four most accurate tests, only one yields indications which can be trusted to at all; and even that test will sometimes fail to act characteristically.

Section Second.

Several modes have been proposed for destroying the colour of these animal and vegetable infusions, under the expectation that the precipitates produced by the tests would then appear of their true and peculiar tints. Two processes have been recommended for this purpose. The one was proposed in 1821, by Professor Orfila of Paris, in his Leçons de Médecine-Légale. The other was published last January in the Annals of Philosophy, by Mr. Rich. Phillips, editor of that journal. Orfila proposes to destroy the colour by chlorine; after which, he alleges the re-agents act on the filtered fluid as on a pure arsenical so-solution (II. 93. & 416). Mr. Phillips, on the other hand, proposes to boil the suspected fluid with animal charcoal; and says, he has found, that port-wine, gravy-soup, infusion of onions, or the *liquor arsenicalis*, may be rendered in that way sufficiently colourless for the application of the most delicate tests (vii. 31. N. S.). These processes do not seem to have been yet subjected to experiment by other chemists.* I can conceive no other reason, at least, why the former in particular has been so long under the public eye without notice or criticism. For no one can have made fair trial of them, without being convinced that their application is confined by such narrow limits, and that, within those limits, they are liable to so many fallacies, as must render them almost entirely useless in medico-legal researches.

If I may be permitted to judge from a great number of experiments made repeatedly and with due care on several kinds of coloured fluids,—which were chosen at random from among

* That of Orfila, indeed, has been noticed in the late elaborate work of Dr. Paris and Mr. Fonblanque; who admit that it may aid the accomplished chemist; yet declare, that in the hands of an unpractised person, it is subject to fatal fallacies. But they assign no reason for this opinion, and do not appear to have personally tried the process. (See *Med. Jur.* ii. 253.)

the common articles of food and drink,—the process of Orfila is objectionable on the three following grounds:

1*st*, The colour is very seldom destroyed so entirely but that the precipitates caused by some of the tests still deviate to a certain degree from their characteristic tints; and although the colour of the fluid be even destroyed entirely, it often re-appears in the precipitates.

2*dly*, Although the chlorine destroys the colour, it does not also take from the fluid its power of preventing the action of some of the tests—in other words, its power of retaining the arsenical precipitates in solution.

3*dly*, In fluids decolorized by chlorine, and containing no arsenic, some of the tests produce precipitates, not only precisely the same with those which they cause in a decolorized arsenical solution, but likewise very similar in appearance to those caused in a pure aqueous solution of arsenic.*

The subjoined experiments will show that lime-water is very liable to the difficulties mentioned in the first of these objections, the ammoniacal nitrate of silver and ammoniacal sulphate of copper to that related under the second, and lime-water and the ammoniacal sulphate of copper to that most important of all laid down under the third. In short, the only test whose efficacy can be relied on in decolorized arsenical fluids, is the sulphuretted hydrogen. Now, we have already seen, that the sulphuretted hydrogen acts with great nicety and exactness on arsenical solutions, notwithstanding the conjunct presence of the most complicated and deeply coloured organic principles Hence the process of decolorization is unnecessary, so far as regards that test; nay, it is rather injurious than useful; for, unless the arsenic exists in large proportion, the bright golden colour of the sulphuret is sometimes deadened to lemon-yellow, or even yellowish-white.

The fluids chosen for the experiments about to be related, were Port wine, Porter, and Tea made in the usual way with cream and sugar. They were decolorized sometimes by the liquid chlorine, as advised by Orfila, sometimes by a stream of the gas itself; but ere long I always preferred the latter mode, as being less troublesome, more complete in its effect, and possessing the advantage of not diluting the fluid. It always separated a curdy precipitate, which of course was removed by filtration before the tests were applied. After filtration, the Port wine had commonly a very faint wine-yellow tint; the porter, though it had entirely lost its brown colour, had a milky opalescence; but the tea was, in general, decolorized altogether.

* Orfila has paid no attention to the effects of the tests on decolorized fluids containing no arsenic.

Lime-water.—In decolorized Port wine, lime-water produced a pretty considerable flocculent precipitate of a pale yellowish-red colour.* If arsenic was present to the extent of two grains in the ounce, the precipitate was more abundant, but of the same colour, or sometimes flesh-red. In decolorized Porter, it first destroyed the milkiness produced by the action of the chlorine, and then caused a pale yellowish-gray cloud, which gradually formed into a flocculent precipitate of the same hue. If arsenic was present, even to the extent of a 250th part, the effect was precisely the same, except that the quantity of the precipitate was considerably greater, probably twice as great. On decolorized Tea, lime-water had no effect whatever. When it contained from a thousandth to a 250th of arsenic, a pale yellowish-brown cloud was formed; and in the course of some hours, a scanty flocculent precipitate of the same colour gradually fell down.

In none of these mixtures, then, after they are deprived of their colour, does that re-agent produce its characteristic effects; and in two of them, its effects, though differing in degree, are the same in kind, whether arsenic be present or not.

Ammoniacal sulphate of copper.—The ammoniacal sulphate of copper, added to decolorized Port wine, first causes an apple-green precipitate, which is speedily re-dissolved; but, on the addition of a larger quantity of the test, a copious bluish-green precipitate is thrown down, which is permanent; and, in the course of some hours, passes to celandine-green, and thence in a day to a dingy tint, intermediate between celandine and apple-green.† The effects are precisely the same in every respect when arsenic is present, even to the amount of a 250th part. In fact, the arsenite of copper is not thrown down at all in the decolorized arsenical solution; on the contrary, decolorized port wine dissolves the arsenite of copper thrown down from a pure solution of arsenic. This is probably owing to the tartaric acid contained in the wine; for the arsenite of copper is very soluble in that acid.‡ On decolorized Porter, with or without the oxide of arsenic, the effects of the ammoniacal sulphate of copper are precisely the same as in the case of Port wine;—

* Impure tartrate of lime.

† I have not had leisure to inquire what principles in the wine occasion this precipitate.

‡ It may be also kept in solution by the chlorine changed to hydrochloric acid, provided the test contain but a small proportion of ammonia insufficient to neutralize that acid. The arsenite of copper is also exceedingly soluble in nitric acid and acetic acid: oxalic acid in minute quantity also dissolves it; but, in a few seconds, a pale azure-blue precipitate falls down, the oxalate of copper. Hence it is easy to see, that when the quantity of arsenic is inconsiderable, it will seldom be thrown down from vegetable infusions by the ammoniacal sulphate of copper.

with the single exception, that after the precipitate ceases to be re-dissolved by the fluid, it is thrown down celandine-green at once. The very same remarks apply to decolorized Tea, with or without arsenic. The solvent in porter is probably, as in wine, the tartaric acid; in tea it is tannin, according to Rose.

These experiments require no commentary to enable the reader to understand the danger, that, in such circumstances, might accrue from the use of this test, sanctioned as it is by the authority of Orfila. It is, in fact, altogether deceptive. Not only does it not throw down arsenic, which does exist in the mixture; but also, when no arsenic is present, it causes a precipitate very similar to the arsenite of copper.

Ammoniacal Nitrate of Silver.—The ammoniacal nitrate of silver causes with decolorized Port wine an abundant white precipitate, having a very faint tint of red, and permanent in the dark. When arsenic exists to the amount of two grains in the ounce the effect is precisely the same, there is not the slightest perceptible tint of yellow.* This is not owing to the great quantity of chloride of silver obscuring the colour of the arsenite; nor does it arise from the disengaged nitric acid of the test retaining the arsenite in solution; for if a very small proportion of arsenic be dissolved expressly in a solution containing free hydrochloric acid, the precipitate with the ammoniacal nitrate of silver has a deep yellow tint. It is owing to the solvent power of the wine itself; for decolorized wine, if the chlorine and hydrochloric acid be previously removed by nitrate of silver, readily dissolves the arsenite of that metal. The dissolving principle of the wine, as in the case of the last re-agent, is probably the tartaric acid; at least a small quantity of tartaric acid rapidly dissolves the arsenite of silver.† In decolorized Porter, the effects of the ammoniacal nitrate of silver are almost exactly the same; the colour of the precipitate is cream-white, or grayish-white, without any reference to the arsenical impregnation of the fluid. The same remarks apply to decolorized Tea; the precipitate, however, being in all circumstances snow-white. I have not had leisure to inquire what is the solvent principle in the last case. In porter, as in wine, it is probably the tartaric acid.

It is evident, therefore, that in regard to this test also, the process of decolorization by chlorine is quite useless; because it does not enable the test to act upon the arsenic at all.

4. *Sulphuretted Hydrogen.*—On decolorized Port wine sul-

* Of course, care was taken to continue the addition of the test after all the chlorine had been thrown down and removed by filtration.

† The arsenite of silver is also soluble in citric and acetic acids, but not so readily: oxalic acid likewise dissolves it, but if an excess be not used, a white precipitate is soon substituted, the oxalate of silver.

phuretted hydrogen has no immediate effect; but in a few minutes it causes a yellowish-white milkiness, which, on the application of heat, gives place to a considerable reddish-gray, dingy precipitate.* The precipitate is sensibly less, if the fluid, before the transmission of the sulphuretted hydrogen, be heated to the boiling temperature, so as to drive off the chlorine: yet even then the quantity is not inconsiderable. When arsenic is present, even in the proportion of a 250th part, the sulphuretted hydrogen has at first no effect; but in a few minutes a yellowish-white opacity takes place, and the application of heat then produces a copious yellowish-white precipitate. The effect of this test on decolorized porter is nearly the same as on decolorized wine; except, that, when no arsenic is present, no change takes place before heat is applied, and when arsenic is present, the precipitate is lemon-yellow, instead of yellowish-white. On decolorized Tea, with or without arsenic, its effect is precisely the same as on porter.†

From these experiments it would appear, that Orfila's process does not render the action of this test more true; for the colour of the sulphuret of arsenic must be modified in the weaker solutions by the precipitate caused by the test with the chlorine alone; and in the stronger solutions no decolorizing process is required, since the sulphuretted hydrogen acts characteristically without its intervention.

If the foregoing observations are correct,—and neither time nor labour has been spared in varying the experiments, on which they are founded,—it follows, that, in the circumstances in which a decolorizing process is requisite, namely, in solutions not very concentrated, the method of Orfila is generally useless, often detrimental, nay, sometimes even dangerous. The reader may therefore be naturally disposed to inquire, why it has been recommended by so reputable an author, and so practised a chemist as the Parisian Professor. One cause of the errors into which he has fallen has evidently been an inattention to the effects of the tests on decolorized fluids which contain no arsenic. Had he investigated that point, he could not have failed to observe, that the lime-water and ammoniacal sulphate of copper act on such fluids when unsophisticated, nearly or entirely in the same way as when arsenic is present in them. As to the silver test, which we have seen to be so useless in decolorized fluids,—if we may judge from the imperfect account of it given in his works, it has never been much the object of his regard.

* This precipitate is sulphur, tinged by the remaining colouring matter of the wine, and derived from the decomposition of the sulphuretted-hydrogen by the chlorine.

† In all these experiments, except in the case of wine, the action of the gas on the arsenic was greatly facilitated by the previous addition of a little acetic acid. The reason of this is not very obvious.

I may add further, that, if, according to the practice of most lecturers on chemistry, he employed very strong solutions of arsenic, he would undoubtedly find the tests very characteristic in their action. But such solutions can very rarely be the subject of medico-legal investigation; and, besides, most of the tests would act as characteristically on them, without the previous destruction of their colour.

The next mode in which it has been proposed to decolorize mixed arsenical solutions, with the view of restoring the true action of the tests, is by boiling them with animal charcoal. The method recommended by Mr. Phillips, the proposer of the process, is thus stated in the number of the Annals of Philosophy for last January.

"On considering this part of the subject, it appeared to me that animal charcoal (ivory-black) might be advantageously employed for the purpose of destroying the colouring matter. I therefore mixed some of it with a coloured solution of the arsenious acid, namely, the *liquor arsenicalis* of the London Pharmacopœia. I found that the colouring matter was so completely destroyed in a few minutes, that the test of nitrate of silver, or any other, might be readily applied. I repeated this experiment with port wine, gravy soup, and a strong infusion of onions, and succeeded in these cases in procuring a solution sufficiently colourless for the application of the most delicate tests." (p. 31.)

Since animal charcoal possesses the property of removing mineral, as well as vegetable and animal matters, from the fluids in which they are dissolved, it might be reasonably questioned, whether by removing the colour of such fluids the arsenic will not be removed also. And the doubt here expressed carries some weight with it, when we consider that not long ago Mr. A. T. Thomson proposed to detect arsenic in solution, by boiling the fluid with charcoal, and then collecting and drying the charcoal, and subjecting it to the heat necessary to sublime the metal. Accordingly I have found, that from all the solutions of arsenic in the coloured fluids formerly mentioned, the poison is nearly or entirely removed, before the colour is destroyed by Mr. Phillips's process. If coffee, which contains two grains of the oxide in each ounce, be digested with successive small portions of animal charcoal till its colour is nearly removed, the sulphuretted-hydrogen is the only test which has any decided effect on the resulting fluid; it causes a very scanty lemon-yellow precipitate. Lime-water has no effect, the copper test produces an exceedingly scanty azure-blue, and the silver test an abundant cream-white precipitate. Tea decolorized in the same manner gives no distinct indications with any of the tests, except sulphuretted hydrogen, if it contained but one

grain to the ounce. If the quantity, however, had been twice as great, then the sulphureous precipitate is abundant, and the silver test gives a yellowish-white one, which becomes white with nitric acid, and the remaining solution gives a pure gamboge yellow precipitate, after filtration and neutralization of the ammonia by nitric acid. Lime-water, however, does not act distinctly; and the copper test merely gives the colourless liquor a bright grass-green tint, without causing any precipitation. Porter, even when it contains two grains per ounce, gives no precipitate with lime-water after decolorization; the copper test causes a scanty azure precipitate, passing in half an hour to celandine-green; the silver test a pale cream-white one; but the sulphuretted hydrogen a pretty considerable sulphur-yellow powder.

These experiments render it clear, that in fluids so deeply coloured as the foregoing, the destruction of their colour will seldom restore the genuine action of the tests, provided the proportion of the poison do not exceed a 250th part. I have already said, that in medico-legal analyses solutions of greater strength will seldom be met with.

It was hardly necessary to search for the cause of the failure of Mr. Phillips's process. But that no doubt might be left on the subject, I submitted to Mr. Thomson's test the charcoal on which the coffee and tea had been digested: and though the quantity of charcoal was considerable, I procured from it, with proper precautions, a large quantity of metallic arsenic.

Another objection also lies against this process. Although it removes one cause of the inaccuracy of the tests, namely the colour of the fluids in which the arsenic is dissolved, it does not always remove another source of embarrassment, namely the power which some of these fluids have of retaining the precipitates in solution. This is well exemplified in the case of tea: for in a decolorized solution of arsenic in tea, of such strength as to yield decided indications with the silver and sulphureous tests, the ammoniacal sulphate of copper causes no precipitate, but merely strikes a green colour. Other instances of the same nature might, I am sure, be discovered; but I have not had leisure to pursue the subject farther.

It appears, therefore, that in mixed arsenical fluids, of the strength commonly to be met with in medico-legal researches, no advantage, but rather positive harm, will result from the employment of the processes at present in use for destroying the colour of the menstruum.

Section Third.

It now remains for me to examine in the third place the processes which have been suggested for the detection of arsenic,

when it is so minutely united with animal or vegetable matters, as to resist the action of ordinary reagents. These processes may be arranged under two heads. One consists in the simultaneous deflagration of the organized matter, and conversion of the arsenic into arsenic acid. The other includes several processes for effecting the solution of the whole compound matter, and then throwing down the arsenic in the form of some arsenite or other, with the view of subjecting it afterwards to the test of reduction.

The first process was originally proposed by a German chemist of the name of Rapp, and has been subsequently modified and recommended by Professor Orfila. It consists in evaporating the mixture to dryness; and projecting the dried mass in small successive fragments into melted nitre, contained in a narrow-necked mattrass. In this way, while the organic matter undergoes deflagration, the arsenic is said to be more highly oxidated, and to form, with part of the free potass of the decomposed nitre, an arseniate of potass. After this stage of the process is completed, it only remains to dissolve the mass in water, and neutralize the rest of the free potass with nitric acid; and then the arsenic acid may be detected by its liquid tests, which are sufficiently characteristic. The applicability of this process evidently depends on the supposition, that the carbonaceous matter of the mixture will take its oxygen rather from the nitre than from the oxide of arsenic. One would be apt to imagine, however, that the carbonaceous matter, when heated to redness on the surface of the fused nitre, might take its oxygen also from the oxide of arsenic, so that the latter would be immediately sublimed in the form of metallic arsenic. From several very careful experiments, conducted with all the precautions mentioned by Orfila, I am disposed to believe that this effect is really often produced, if the proportion of carbonaceous matter be considerable, or at all events, that, whatever may become of the arsenic, it will not be found in the form of an arseniate in the fused mass, which remains in the bottom of the vessel. Thus I twice subjected to the process the dry residue of an ounce of tea,* in which a grain of arsenic had been dissolved; and I could not detect a particle of arsenic acid in the remaining mass. In a third trial I collected all the matter which had been raised and condensed on the upper portion of the mattrass, and which contained but a small proportion of charcoal; and I found, that when this was subjected anew to deflagration, arsenic acid might be detected in it in very minute proportion. I am not yet satisfied of the precise chemical changes which take place during the deflagration of mixtures of oxide of arsenic

* Evaporated in the vapour-bath.

and dry vegetable and animal matter. But from the trials already made I conceive it may be fairly inferred, that when the quantity of the poison is small, and its proportion to the mixed matters likewise small, (in which circumstances alone, as will soon appear, the destruction of the organic matter is required,) the mode of procedure advised by Orfila is quite useless, or at all events demands such nice manipulation as renders it altogether ineligible in medico-legal researches.

The next process I shall mention is that which was proposed by Rose of Berlin to be applied to the tissues of the stomach, and which, with certain modifications, may be also applied to every case in which the ordinary reagents fail.

Under the idea, that arsenic, when introduced into the stomach, will combine so intimately with its tissues as not to be separable by simply boiling it with water, he proposes to cut the whole organ into small fragments, then to boil them in a solution of caustic potass till they are almost or altogether dissolved, next to neutralize the potass by nitric acid, next to throw down the arsenic with lime-water, and finally to subject the precipitate to the test of reduction. The various niceties required in the management of this process I need not enumerate: they are to be found in every text book on Medical Jurisprudence.

The process of Rose I imagine will be found much superior to that of Rapp and Orfila, when the substance with which the poison has entered into combination, is (like the tissues of the stomach and most of the soft animal solids) soluble in caustic potass.

But is either of the processes ever necessary? Can the oxide of arsenic unite under any circumstances with vegetable or animal matter, so as to be inseparable from them by simple digestion in water? For, if no such union is possible, the ordinary mode of analysis will serve in all the cases for which these more complicated methods are intended. The question now stated has not hitherto been carefully considered; and indeed does not appear even to have occurred to some of those who have been most active in devising the processes alluded to. The only well authenticated evidence of a chemical action existing between organized matters and the oxide of arsenic is, that it retards or prevents their putrefaction. That such is the fact has been proved by several French and German experimenters; and I may add, that some observations I have lately made coincide with the result of their researches. But although this property should be assumed as proof of the existence of some chemical action and union between arsenic and organized matter, I am not acquainted with any fact or even analogy, which will lead to the inference, that a union of this kind, effected without change in the composition or structure of the combining

matters, may not be overturned by the simple dissolving power of water or other ordinary solvents. I am not aware, that direct experiments have yet been made to show, that, in any of the soft animal solids, which have been preserved in arsenic and impregnated with it, the poison can be detected by the method of Rose, or that of Rapp, or in any other way whatsoever, after these impregnated solids have been thoroughly digested in boiling water. In the original memoir of Rose, indeed, he states that by means of his process he detected minute portions of arsenic in the stomachs of animals killed by it.* But these experiments are not at all conclusive. For he subjected to the action of potass not only the stomach itself, but likewise its whole contents; and without digesting them previously in water. This fact seems to have been overlooked by those who have quoted his treatise and adopted his proposed method. Others, I believe, have repeated his experiments with success, but under what precise circumstances I have not been able to learn.

I therefore thought it right, in the absence of satisfactory information, to make some inquiry into the nature of the supposed union of arsenic with animal matters,—so far at least as it is connected with medico-legal analyses. Having kept several portions of an ox's stomach in a saturated solution of arsenic for a fortnight, they were finely minced, and then boiled in successive portions of water, till the ammoniacal nitrate of silver had no effect on the washings. The residue was then treated with great care according to Rose's process; but I procured only a very minute flocculent precipitate, far too scanty to be collected. I next made another trial with three times the same quantity of an ox's stomach, which had been kept for a month in a saturated solution; but I procured no precipitate at all. Finally, I repeated the experiment with a considerable portion of a human stomach, which had been kept in a similar solution for three weeks; and the lime-water merely produced a very slight haziness, but no precipitate. Of course in these experiments care was taken to add the lime-water in great abundance, lest any deception might arise from the solubility of the arsenite of lime in an excess of arsenic.

We are entitled to infer from the foregoing results, that under any circumstances which can occur in the practice of Medical Jurisprudence, arsenic cannot be so united with animal matters as to be inseparable by simple digestion. Now, it will be shown presently, that when arsenic is once dissolved, whatever may be the vegetable or animal principles coexisting with it in the solution, one of the common liquid tests may be em-

* Gehlen's Journal. II. 670. It appears that he sometimes succeeded in detecting so small a quantity as an eighth part of a grain.

ployed, so as to yield the most unequivocal proof of the existence of the poison, even when the quantity is inferior to that which can be detected by the method of Rose or Rapp. It is consequently fair to conclude, that both these methods are unnecessary; a result of no small importance, when it is considered how ill they are calculated to succeed in the hands of persons unaccustomed to chemical analysis.

The next process to be noticed is mentioned by Dr. Paris in his work on Medical Jurisprudence. It is mentioned cursorily indeed; but he seems to place much reliance on it. I should observe, that it is applicable only to fluid mixtures. Dr. Paris proposes to add the ammoniacal nitrate of silver to the fluid as long as any precipitate falls down, and to subject the dried precipitate to the process of reduction. This proposal may be objected to on several grounds; 1. In the first place, we have seen that the arsenite of silver is soluble in various principles existing in animal and vegetable fluids; and consequently the arsenic may not be thrown down, though present in notable quantity; 2. As the test precipitates with almost all such fluids, whether arsenic be present in them or not, we shall be always put to the trouble of carrying on a tedious process to its very conclusion; because it is only at the very end, that we can obtain even a presumption of the presence or absence of the poison; 3. I have always found that after the fluids in question have been precipitated by nitrate of silver, the filtration of so small a quantity as two or three ounces requires a day and a half to be completed; and the solid matter when dry is so incorporated with the filter, that, if the quantity be small, little or none can be separated; 4. The quantity of animal and vegetable matter thrown down with the arsenite of silver is inconveniently great, and occasions much trouble during the subsequent process of reduction, by frothing up and filling the tube before the metal can be sublimed.

I shall now conclude with a description of what appears to me the most simple and unerring mode of detecting arsenic, when mixed with vegetable or animal solids and fluids, or, I may also add, when it is mingled with any *mineral* substance with which it cannot form, under the action of boiling water, an insoluble compound.

The agent I should propose to employ for separating it from them is the sulphuretted hydrogen gas. The facility which this test affords in the analysis of arsenical mixtures has been far too much neglected, especially in this country, where the attention of chemists and medical jurists has been rivetted on the two most inaccurate and most fallacious of the common re-agents, namely, the ammoniacal sulphate of copper and the ammoniacal nitrate of silver. Neither of these tests is of any use in the greater number of vegetable and animal fluids, unless the poison

be dissolved in them in such proportion as no one need ever expect to encounter in medico-legal investigations.

The suspected matter, if solid,* is to be divided into minute fragments, and boiled briskly in two or three successive portions of pure water. The fluid, whether originally such, or procured by digestion from the solid matter, is then to be subjected (in a deep narrow glass) for half an hour, or three quarters of an hour, to a brisk stream of sulphuretted-hydrogen gas. In many cases, however, it will be requisite to premise the two following preparatory steps, before transmitting the gas through the fluid; and, as we can seldom know beforehand whether these steps are requisite or not, it may be proper to resort to them in every case. The first precaution is to add a little acetic acid to the fluid: By so doing the influence of any free alkali that may exist in it is counteracted; and several organic principles, which might impede the subsequent separation of the precipitate, are coagulated. The second precaution is to boil the fluid for a few minutes; by which means some matters are separated that the acetic acid could not throw down entirely; and any carbonic acid existing in it is driven off. The presence of carbonic acid in considerable quantity, by impeding the solution of the sulphuretted hydrogen, prevents its action on the arsenic, if the proportion of arsenic be small.† The fluid is then to be filtered. If the addition of acetic acid separated a large quantity of insoluble matter, it may be right to filter also before boiling. Whenever the quantity of insoluble matter separated by heat or the acetic acid is considerable, it must be removed from the filter after being well drained, and then squeezed in a linen cloth, and moistened with water and squeezed again, and the strained fluid added to the rest. When the stream has been continued a sufficient length of time, there is either a precipitate formed, or the fluid acquires a yellowish milkiness, which passes to a distinct precipitate as soon as the excess of sulphuretted hydrogen is driven off by heat. It is always right to boil before attempting to separate the matter thrown down, as the precipitate then becomes much more distinct and falls to the bottom more readily. The vessel is now to be left at rest in a cool place till the precipitate has completely subsided; as much of

* I have not tried whether arsenic may be separated by digestion in water from all animal and vegetable solids with which it may be mixed; but judging from the experiments I have already made, I do not anticipate that greater difficulty will ever be encountered than when it has been intimately diffused through the tissues of the stomach.

† When the arsenic is in small proportion, the previous solution of the sulphuretted hydrogen has appeared to me always requisite for its action to take place; the stream may be transmitted for five or ten minutes without any sensible effect. On the other hand, if the arsenical solution is strong, the first bubble of gas causes a precipitate.

the supernatant liquid is to be poured off as is possible, and the remainder thrown upon a filter. If the fluid however is viscid, it will be useful to substitute water for the liquid poured off, to allow the precipitate to settle again, and then to decant and filter. Lastly, when the filtration is finished, the filter is to be carefully compressed between several folds of bibulous paper, till the paper ceases to be moistened, the precipitate is to be scraped off with a knife, dried on a bit of smooth paper at a temperature somewhat above 212°,* and then subjected to the test of reduction. These directions, of course, are given for the sake of those only who are not accustomed to chemical manipulations. For the benefit of the same persons I shall also describe the easiest and surest mode of performing the reduction.

The best substance for reducing arsenic on the small scale is the black flux.† If the quantity of matter be not considerable, the reduction should never be attempted but in a glass tube closed at one end.‡ It should not be above three inches long; its diameter may vary from an eighth to a fourth of an inch, according to the quantity of material. The matter should not fill above three-fourths of an inch of the length of the tube. It is introduced most easily, without soiling the tube, by placing it in a little triangular gutter of thin pasteboard, sliding this nearly to the bottom, and then knocking the sealed end gently on the table. The pasteboard being withdrawn, the sealed end of the tube is to be held (naked) in the flame of a spirit-lamp, or common blow-pipe lamp; but the former is preferable, as no blow-pipe is required, and the heat is never too violent.§ The

* This is preferable to the usual mode of drying the precipitate on the filter itself.

† Almost all authors on chemistry and medical jurisprudence recommend, as an alternative, a mixture of charcoal powder and potass. But it is liable to serious objections. On the one hand, the charcoal powder, if minute, is raised in the tube by the current of gas and vapour disengaged, and forming a crust on the inside, obscures the sublimed metal, or may be mistaken for it. On the other hand, the disengagement of the water of the potass causes such an effervescence, that the matter froths up and fills the tube before any arsenic can be sublimed. Neither of these inconveniences attends the employment of the black flux. The charcoal of the black flux is not necessary in the process; and subcarbonate of potass might therefore answer as well, but it is seldom so dry.

‡ As a tube is not always to be had, various shifts have been recommended by authors. But it should be remembered, that these are only available in the hands of the experienced. A glass tube may be sealed by the heat of a spirit-lamp, or gas light, without the aid of the blow-pipe. If the operator is not accustomed to glass-blowing, he will easily succeed in closing it by heating it to redness, twisting one end between the finger and thumb till the cavity is obliterated, and then drawing it out a little, and cutting it with a file after it has cooled.

§ The medical jurist is much indebted to Mr. Phillips for suggesting the use of the spirit-lamp in this process. I need scarcely remind the unpractised operator, that he may easily convert a common oil-lamp into a spirit-lamp.

open end of the tube should not be closed, as is generally recommended. The heat must be applied gently at first, otherwise the watery vapour disengaged may propel the material out of the tube. As fast as the moisture condenses on the upper part of the tube, it should be dried by a little roll of filtering paper. When the watery vapour has nearly ceased to be disengaged, a black vapour rises and condenses on the tube. This is charcoal, derived from the decomposition of the animal or vegetable matter, and carried along by the steam and gases. The arsenic does not begin to sublime till the discharge of carbonaceous vapour has nearly ceased; and it always condenses lower down, and within the shortest possible distance from that part of the tube which is exposed to the flame.

The true arsenical crust is known by the following physical characters. Its outer surface next the tube exactly resembles highly polished steel. Its inner surface (which is best seen by scratching the tube with a file at the lower margin of the crust, and snapping it across) is precisely like the fracture of fine steel, if the quantity is considerable; if it is very minute, it has a dull bluish-gray appearance; but before a microscope of four or five powers appears brilliant and crystalline like the fracture of steel. Occasionally, when very minute in quantity, it appears botryoidal and not brilliant, even before the microscope: in that case the part of the tube to which it is attached should be broken off, coarsely powdered, and heated anew in a tube of less diameter. It is scarcely possible for any one to mistake these characters, particularly if he has ever seen an arsenical crust before;* but to prevent all possibility of error, the analysis may be concluded with the following experiment, first suggested, I believe, by Orfila. The part of the tube to which the crust is attached being broken into fragments, is to be left for some hours in a watch-glass containing a dilute solution of the ammoniacal sulphate of copper, and covered to prevent rapid evaporation. In four or five hours the metallic crust will become grass-green; or, if very minute, it will be dissolved, and a brilliant grass-green crust formed on the surface of the liquid. The simple evaporation of the fluid will cause the formation of a crust on its surface, though no arsenic be immersed in it. But in that case its colour is pale azure-blue. The colour of the crust on the liquid is best seen by skimming it off with a bit of stiff white or blue paper.

* Dr. Paris says he has known a crust of charcoal mistaken for that of arsenic. I have myself known the same error committed; and a careless observer may readily commit it; for the outer surface of the carbonaceous crust is often very brilliant. But it is brown and internally dull, so that when examined attentively, it can never be mistaken for arsenic.

The following appear to me the chief advantages which the method now recommended possesses over every other.

1. In point of simplicity, it is evidently much superior to that of Rose or Rapp; and, so far as my own trials go, it is equal, or even superior to them in delicacy. I have applied it to tea, coffee, broth, milk, porter, and port-wine; and I find, that from one quarter of a grain of the oxide, dissolved in four ounces and a half, or 8000 parts of each of these liquids, a sufficient precipitate may be procured for carrying on the subsequent process of reduction with perfect accuracy.* It is not long since the best authorities believed, that to show the test by reduction required three times that quantity even of the oxide of arsenic in a state of purity.†

2. Sulphuretted hydrogen, used with the precautions I have mentioned, never fails to throw down arsenic, even in the small proportion in which it existed in the fluids enumerated above. Since these fluids are as complicated and different from one another as can well be imagined, it is fair to infer that this rule has no exception.

3. At the very commencement of the process we procure a presumption of the presence or absence of arsenic. For sulphuretted hydrogen does not, like the three other precipitants, cause any precipitation with the unsophisticated fluids themselves. Hence, if the liquor remains undisturbed, after concentrating it, and subjecting it anew to the gas, the process may be abandoned, and we may rest assured that arsenic does not exist in such quantity as to be appreciable by any method of analysis.

4. It has a great advantage over the nitrate of silver used in the process of Dr. Paris, by throwing down but a small quantity of organic matter with the precipitate. The quantity is too insignificant to impede materially the process of reduction.

Finally, the evidence it affords of the existence of arsenic is quite unimpeachable.‡ If a precipitate be procured with the

* The only one of these fluids which caused any embarrassment, was milk; for on heating it to expel the excess of sulphuretted hydrogen, a quantity of caseïn is thrown down, which neither the previous boiling nor the acetic acid can separate; and consequently the proportion of animal matter is too great for the ready performance of the subsequent process of reduction. To obviate this inconvenience, the heat applied to expel the gas in the case of milk, should not exceed 140 or 150°; or the gas may be allowed to escape gradually by exposure to the air for two or three days.

† Which was owing, I believe, to the mode of heating the tube. With the blow-pipe or alcohol lamp, I have several times succeeded in procuring a decided arsenical crust from a sixteenth of a grain of the oxide.

‡ A recent author suggests, that the test of reduction is liable to fallacy—from the possibility of an error as to the identity of the suspected matter. It is certainly proper to put the medical jurist on his guard. But if he is careful, such an error appears next to impossible.—Medico-legal authors have recently

sulphuretted hydrogen, and that precipitate yield, by the process of reduction, a crust possessing the physical characters and chemical property described above, it is quite impossible to draw any other conclusion, than that arsenic has been detected.

Observations on Hydrocephalus Internus, with Cases. Read before Dumfries Medical Society, 4th November, 1822. By WILLIAM MAXWELL, M. D.

(From the Edinburgh Medical and Surgical Journal, for July, 1824.)

The following communication consists of observations on the treatment of that state of the brain expressed by a coincidence of symptoms which are generally found after death to have accompanied a deposition of water in the brain or cerebellum, but which occasionally prevail without effusion of fluid; death appearing in those cases to have been occasioned by inflammation of the substance of this organ, or of its membranes, or by abscess, hydatids, encysted tumours, &c. I am, from this circumstance, disposed to use the term hydrocephalus internus, more in an abstract sense than as an expression strictly derivative.

In the year 1795–6, previous to beginning regular practice, I saw about twenty-five cases of hydrocephalus internus, all of which terminated fatally. From this it was evident that the modes of treating this affection were inefficient, and that hopes of removing the disease must be founded on some new or more active treatment; as in many of the above cases the patients had in an early stage been very freely purged, bled with leeches, and in the arm; and in others a diarrhœa had prevailed from

manifested a propensity to underrate the force of the evidence derived from the reduction of arsenic. (Paris & Fonblanque, II. 251. Beck. II. 219. Smith, 104.) The last author, in particular, says, "Perhaps all that the majority of medical practitioners could swear to, would be, that some metallic substance was encrusted on the glass." I shall simply state what metals may be confounded with sublimed arsenic, and leave the reader to judge for himself what weight is due to these opinions. The only other volatilizable metals are zinc, tellurium, potassium, cadmium, and mercury. Now, zinc requires a full white heat for its sublimation; mercury sublimes in sparse white globules, which can never be mistaken for arsenic; and the three others, besides having a different appearance, are so exceedingly rare as to be altogether out of the question in medico-legal inquiries. Two other metals undergo a sort of spurious sublimation during their reduction, namely, antimony and bismuth. Minute particles of them are carried along with the carbonic acid gas, without proper vaporization, and then will condense in a crystalline mass. But this cannot be effected by the process I have described; at least I have never been able to procure any appearance of sublimate by reducing these metals in a small tube, under the full red heat of the common blowpipe.

the first attack, and continued to an advanced period of the disease. It was thought proper to employ very copious bloodletting in the way by which the largest quantity of blood could be rapidly abstracted from the head: this mode of treatment exceeded expectation, and was done in the following manner: and, as there was considerable danger of the patient sinking from inanition, it was thought a necessary preliminary to obtain the full consent of the parents to a measure attended with much hazard, and extremely painful to the feelings of the practitioner, by informing them, that after the usual mode of purging, moderate bleeding, &c. this distressing measure was the only mean by which the life of the patient could be preserved. I shall, out of nearly ninety cases, about sixty of which recovered, select two wherein the usual characteristic symptoms of the disease were distinctly marked.

Master J., æt. 7, a healthy boy, became dull and indisposed to his usual exercise, complaining of headach, which, with much languor, increased during six or eight days. The bowels were frequently moved by purgatives. At this period pain in the head became more distressing, and the bowels were difficultly moved. The boy showed no inclination to leave the house;—he rested frequently his head in his hands upon a table, or in a kneeling posture on a chair; the muscular power of his limbs began to fail; the pulse became rapid; pain of the head excessive, with occasional remissions, and during these, constant drowsiness came on. Still, however, there was a considerable disposition to take food, although it was passed half digested. The mind now became indistinct, with inability to articulate; vision was imperfect; the evacuations took place without his attention; squinting next appeared; pulse 160—frequent expression of pain in the head; muscles in the neck became supple, the head rolling upon the breast and shoulders, with immobility of the pupils and total want of expression in the eyes; the face pale and inanimate. Mr. J., his father, a medical gentleman, requested that I would take the sole direction of the case, observing, that he was well aware that extreme bleeding was the only means by which the child could be recovered; desiring that it might be carried to whatever extent it might be thought necessary, and that, if the child should sink under such active treatment, he would still retain a warm sense of gratitude for the painful task which he had imposed on me. The time was fixed for the operation, and, with the father's consent, I invited my medical friends Dr. G., Mr. S., Mr. M., and Mr. St., to be present. The father, after providing every thing necessary, withdrew to a remote part of the house, waiting, with the anxiety of an affectionate parent, the fate of an only son.

The boy was laid on a mattress, his head somewhat lower than the rest of the person, medical gentlemen holding each wrist; the jugular vein on the right side was opened; it bled rapidly—the stream was frequently interrupted to prevent fainting. The bleeding was continued till syncope began to take place: a little negus was then given; when the pulse revived the finger was removed from the orifice and the blood allowed to flow till the gentlemen agreed that the pulse could no longer be felt. The patient at this time had no appearance of life, and continued without the least symptom of animation for ten minutes, when he began to revive gradually: and in the evening more favourable symptoms appeared. His mind was remarkably improved, as well as his physical powers, being now able to articulate, although indistinctly, and to tell the hour on a watch. He had a tolerable night's rest, having taken frequently a little water-gruel and beef-tea. During the following day there was but little improvement. On the third day the bleeding was repeated in the left jugular vein, and a complete recovery followed.

Case II.—In April, 1816, I was called to see a child of Mr. B. ætat. 1¼. He had been affected with symptoms of hydrocephalus about seven days, had been repeatedly purged, and bled profusely on the head by leeches. I found the child very languid, insensible to moderate pressure or pinching; vision appeared to be entirely gone, eyes death-like without any expression; squinting with both eyes had continued during three days; uttering frequently shrill screams; the head rolled upon the shoulders as if it had been attached to the trunk by muscle alone. He was bled in the neck, as in the last case, till the pulse could no longer be felt, and remained in this state during some hours before he began to revive. I left him at 11 P. M., and was so apprehensive that bleeding had been carried too far in this case, that I sent my servant next morning to inquire what had happened during the night, and was surprised by learning through him, that the child was so much better, that he saw him at the window in the nurse's arms, looking at two young cocks fighting in the yard. He recovered daily, and is now a fine healthy boy.

In upwards of ninety cases that have been treated in this way, above sixty have recovered. In most of these I have had the assistance of one or more medical gentlemen of this place. Bleeding was generally repeated, as the constitution could seldom bear at one operation a subtraction of blood sufficient to remove the malady.

It may fairly be objected to the success of this treatment, that hydrocephalus internus did not exist in the above sixty cases, but that other causes might have produced delusive symptoms.

I confess that I cannot give an answer sufficiently satisfactory, and that I cannot meet the objection by any better proof than by analogy, for, owing to the aversion that prevails in this part of the country to the examination of the dead, it was with much difficulty that I was allowed to inspect seventeen or eighteen heads out of the twenty-seven. In all of these, with the exception of eight, from one to four or six ounces of fluid were found in the ventricles or within the membranes. As the cases of recovery did in almost every symptom resemble those that terminated fatally, where the heads were allowed to be opened, we may analogically be allowed to infer that the disease in both was the same; and, without better proof, to consider such close analogy a legitimate conclusion. In the other eight cases, above alluded to, the quantity of water did not exceed half an ounce. In the first of these, a cyst, containing about four ounces of fluid, communicated with the right lateral ventricle: death took place at the end of seven months. In the second, there was suppuration in the middle of the right lobe. In the third, three round tumours of indurated cerebrum were found in the cerebellum. In cases fourth, fifth and sixth, much inflammation of the membranes and substance of the brain had existed. In the seventh, suppuration in the *thalami nervorum opticorum*. And in the last, excessive inflammation of the membranes, with some pus, was perceived near the *foramen magnum*.

Dumfries, 4th Nov. 1822.

Case of Rabies, in which Warm Water was Injected into the Veins of the Patient. By B. GASPARD, M. D., at Saint-Etienne (Loire).

(From the London Medical Repository, for July, 1824.)

In December, 1823, J. F. Guillemin, a farmer, was bitten in the right hand by a rabid wolf. As he had no knowledge of the rabidity of the animal at the time, the wound was dressed without previous cauterization or excision of the lacerated parts, and healed quickly. He followed his usual occupations, experiencing, however, some degree of dread on leaving his house at night. Five weeks after the wound was received (on the 14th January, 1824), he began to feel some pain at the back of the neck and in his shoulders, with slight fever, and rigors. On the 15th, at night, he was seized with horror on attempting to drink some water. On the 16th the hydrophobia was constant, and all the usual symptoms of the disease present. On the 17th, Dr. Gaspard saw him, in consultation with Dr. Petiot, when it was agreed to try the experiment formerly made by

M. Magendie, of injecting warm water into his veins. Having exposed the cephalic vein of the right arm, Dr. G. injected, very slowly, about four ounces of warm water, inquiring of the patient, in the course of the operation, if he felt any particular sensations. After the injection of four ounces of fluid, he complained of a tickling and pricking feeling in the whole interior of his chest, although the pulse had suffered no change, either in frequency or fulness. No farther inconvenience having been experienced at the end of a quarter of an hour, M. Gaspard injected, in an equally slow manner, other four ounces of water, which did not increase the sensations complained of, nor did it accelerate the pulse; the pulse was however more full. Thirst and hydrophobia were undiminished, as were all the other nervous symptoms of the disease. M. Gaspard now waited another quarter of an hour, when the patient began to complain of vertigo, of great lowness, with nausea, coughed several times, and immediately afterwards experienced severe rigors. His pulse became very small and frequent, and his body pale and cold, as on the accession of a severe paroxysm of ague. To these symptoms, which continued about half an hour, a hot and a sweating stage succeeded. The three stages of the paroxysm continued about an hour and a half. In other respects the hydrophobic disease remained without the least modification.

The severity of these symptoms prevented M. Gaspard from attempting to inject a greater quantity of warm water: he therefore abandoned the patient to the use of opium. During the night, eight hours after the experiment, the patient experienced another similar paroxysm of fever, with slight delirium and trembling of the tongue and limbs, and the frequent spitting of a frothy mucus. After a frequent discharge of this species of expectoration, he ceased to have any horror at the sight of water, and even drank twice without any pain or repugnance; —a phenomenon remarked in the cases published by M. Trolliet and others. With the disappearance of the hydrophobia, convulsive and other nervous symptoms increased; the delirium became at times furious; he menaced the attendants; and, at last, at six o'clock of the morning of the 18th January, the energy of the system was extremely low—the extremities cold —the pulse scarcely sensible—the muscles of the face agitated with spasms—and the mouth continually filled with a frothy mucus. He died soon after the supervention of this state, and 54 hours after the appearance of hydrophobic symptoms. The body was not inspected.

M. Magendie has subjoined a note to this case, in which he seems to stick with unbecoming pertinacity to his notions about the influence of warm water injection over rabies; and objects to the present experiment of M. Gaspard:—1st, that the patient

was not previously blooded. 2dly, That there was an insufficient quantity of water injected.

Granting M. Magendie the full benefit of his objections, we cannot but consider that the issue would have been the same, in whatever way the experiment might have been made.

Leaving M. Magendie to make further experiments, and wishing that he may make them with more judgment, and detail them with more precision than he has done on some former occasions, we shall next notice some experiments, to which M. Gaspard refers, made on a young man in Guadaloupe, aged about twenty years, for an affection of the skin, and published at Leyden, in an inaugural dissertation, in 1778, by M. Regnaudot.

1st, The 27th of January, half a spoonful of a weak infusion of the leaves of senna, injected into the median vein of the arm, caused only a short and slight headach.

2d, On the next day, an injection of an ounce of the same infusion, occasioned, in the space of half an hour, a violent rigor, followed by heat, some vomiting, and several alvine evacuations. The paroxysm of fever continued nearly eight hours.

3d, The 29th of January, three ounces of an infusion of two drams of the bark of guaiacum, with forty-eight grains of isinglass, injected into the veins of the same individual, produced, as in the former experiment, in the course of half an hour, a very long febrile rigor, followed by intestinal colic and two evacuations. The paroxysm of fever continued more than nine hours, and terminated with a very copious sweat.

4th, Finally, on the 30th of January, this physician injected into the vein of the same man three ounces of water, holding only in solution two drams of gum arabic. About an hour afterwards, the febrile rigor appeared, with a small and frequent pulse. He had three alvine evacuations. A hot stage succeeded the rigors; and the febrile action terminated by a copious perspiration, fifteen hours after the injection.

It will be remarked that, both in these experiments, and in the one performed on the hydrophobic patient by M. Gaspard, the injection of the fluid was immediately followed by a regular febrile paroxysm. This effect did not follow the experiment of M. Magendie, wherein two pounds of warm water were injected into the veins of a patient labouring under febrile delirium, in the Hôtel Dieu; but in that particular instance vascular depletion to a considerable extent had been shortly before employed. May not the paroxysms of fever, noticed in the other experiments, arise, in M. Gaspard's case, from the sudden repletion of the vascular system; and in the experiments performed at Guadaloupe, from the presence of an irritating cause circulating in the blood; the continuance of the

paroxysms holding a close relation with the quantity and nature of the substances injected? Do not, also, these experiments point to some novel ideas respecting the nature of intermittents, which it is unnecessary to particularize at this place?

FROM THE SAME.

Case of Recovery from a Punctured Wound of the Diaphragm. By GEORGE WOOD, Esq., Newcastle-under-Lyme, Surgeon to the North Staffordshire Infirmary, &c.

THOMAS ROWBOTHAM, aged about thirty-five, received two wounds in the abdomen from a shoemaker's knife, on Friday the 28th of June, 1816. The point of the instrument was very sharp, and the blade about three inches long, which was driven into the body as far as it could be plunged. One of the wounds was on the right, and the other on the left side of the epigastrium; they bled profusely—the more so as he was obliged to walk nearly a quarter of a mile from the place where they were inflicted, immediately afterwards. The right wound continued to bleed freely on the day following, and, at intervals, on Sunday and Monday, with the emission of air-bubbles resembling those produced by vinous fermentation. As the hæmorrhage subsided, considerable extravasation of blood appeared, with emphysema, gradually extending over the abdomen.

On Tuesday this part of the body was considerably swelled, and there was a degree of tension. Some blood flowed also from the left wound, and at times he suffered a spasmodic difficulty of breathing. The skin put on a yellow appearance, and there was a slight degree of pyrexia in the evenings.

Depletion was fully employed, with good effect. On the following Sunday suppuration was established, and he was then able to sit up, with every prospect of a speedy recovery. In fact, the wounds were healed in a fortnight, and no complaint then remained excepting debility.

The singular features of this case are the following:—that by one stab from so short an instrument the cavities of the thorax and the abdomen should be both penetrated—that so considerable a wound should be received without effusion of blood into the thorax, or any of the usual symptoms of wounded lungs making their appearance—and that there should be so speedy a recovery from a transverse wound through the diaphragm into the lungs, involving, in all probability, the convex portion of the left lobe of the liver, complicated with a longitudinal wound, three inches in depth, penetrating the left hypochondrium, and allowing a protrusion of the omentum.

To account for the direction of the first of these wounds, it is necessary to state that he was stabbed in the sitting posture, his enemy crouching and striking upwards and inwards; and the thorax escaped effusion by the blood from the wounded lung finding its way to the external opening through the diaphragm, as did also the air from the punctured cells. As the hæmorrhage diminished, blood still passed through the wounded diaphragm (accompanied by air), appearing in black patches in different parts of the abdomen, but more profusely on the right side, producing emphysema.

The cure was favoured by several circumstances. The patient was a man of a strong constitution and of a resolute mind; the means to prevent fever and relax spasm were successful; and these objects were materially assisted by the depending drain for the blood, which acted much in the same manner as the French practice of sucking the blood from the chest.

Cases of Calculi in the Bladder, and Diseases of the Kidneys.

By Joseph Swan, Surgeon, Lincoln.

(From the Edinburgh Medical and Surgical Journal, for July, 1824.)

Mr. C. æt. 74, had enjoyed very good health until the beginning of September, 1820, when he became feverish, and had a disordered state of the digestive organs. A short time after this he passed several calculi of different sorts. He began to suffer irritation in his bladder, and frequently passed red sand, and calculi of different sorts. The urine was for the most part clear. He continued to have more or less of this irritation, and his flesh gradually wasted. For several months he had not decided symptoms of stone in the bladder. About September 8th, 1821, there appeared inflammation near the anus, and this continued to increase for several days. He became insensible on the evening of the 14th, and appeared as if dying. I made an opening on the right side of the anus, and a quantity of very putrid matter was discharged. After this he recovered in some degree. He then began to get worse, and died on the 3d of October.

About six weeks before he died, a large tumour about the size of a child's head was discovered on the left side, extending from the situation of the kidney forward into the abdomen. It never gave pain, even on pressure, nor did he ever complain of pain in his back. His bowels were always very open; but a year before he died, they became confined, and always required aperient medicines.

With respect to the treatment of his complaints, I need say

very little. He experienced much relief from soda, henbane, the black drop, and clysters.

Many years ago his horse threw him on the pummel of the saddle, and for some time he passed with his urine something resembling soft mortar. It was then thought he had a stone in his bladder; but Mr. Pott ascertained, by sounding, that it was not so, and the symptoms left him, and did not return.

Examination.—On opening the abdomen, the spleen was found much enlarged. The left kidney was very large; and on being divided, was found to have a large cavity containing putrid matter. In the infundibula there was some red sand, exactly like that usually observed in the urine. After the matter was removed, the kidney weighed two pounds and a half avoirdupois. The right kidney was sound, and weighed seven ounces. The bladder contained four calculi, and was sound, except a slight enlargement of the prostate gland. There was a stricture in the rectum. The matter discharged from the abscess resembled that contained in the kidney, but I could not exactly ascertain whether these parts communicated.

Case II.—William Russel, æt. about 40, suffered very much from stone in the bladder, and wished to have the operation performed. He appeared to be in perfect health. A day was fixed for the operation; but, early in the morning, he was seized with pain in his back, and rigors, and his pulse was 130. He continued to have fever, with a great disturbance of the digestive organs, and became quite jaundiced. His body was emaciated; but he appeared to die more from the constitutional irritation than the emaciation.

For about eight years he had frequent attacks of pain in the back, about the region of the kidneys, which were attended by a great discharge of blood from the bladder. Riding always brought them on; and he was invariably relieved by bleeding from the arm.

Examination.—On opening the abdomen, every part was much loaded with fat. The liver was sound, and the gall-bladder distended with bile. The pancreas was enlarged, and had a scirrhous hardness; it pressed on the termination of the gall-duct, and caused an interruption to the free course of the bile. Both kidneys were enlarged and soft, and contained several bags, which had the appearance of hydatids. Some purulent matter was observed in the division of the kidneys. The disease was in the greatest degree in the left; and its ureter, near the termination in the bladder, contained a small calculus. The bladder was sound, but contained three calculi.

Case of Rupture of the Jejunum.

John Copaldish, æt. about 70, was kicked by a horse just above the navel, on the 24th of April, 1821, at one *p. m.* He

was very faint for some time, and in extreme pain. He was bled, and had his body fomented; he took an opiate, and had a clyster. He was in great pain always at the spot where he was injured. There was a little discoloration, as from a slight bruise, but there was not the least wound. The abdomen became tense about two hours after the accident, and so tender as not to bear being touched. He died at ten *a. m.* on the 25th. He was able to retain some gruel and other mild things on his stomach, and he never vomited after the accident. The clyster purged him well, and passed plenty of urine.

Examination.—There was a small opening in the lower part of the jejunum, and the lips of the wound were everted; the whole of the small intestines near the injured part were inflamed, so that coagulable lymph was effused, by which several folds were glued together. The villous coat was not inflamed. The whole peritoneum was becoming inflamed; but the omentum was in a high state of inflammation, and adhered to the intestines. There was a large quantity of bloody serum in the abdomen, but very little feculent matter had escaped. On two portions of the intestine there was a black patch of the size of a shilling, which was only an ecchymosis.

Case of Chorea.

Master Toynbee, æt. 9 years, had for the last three months been losing his flesh and spirits, and his arms had become very weak. About the end of September, 1822, he was seized with chorea, which affected almost every muscle of the body. He took submuriate of mercury and purging medicines, as his bowels were very much constipated, and his stools black. He complained much of the back of his head. His appetite was various. The feces resumed a proper appearance, but he still continued costive; and the chorea continued unabated. On the 17th of October a blister was applied to the lower part of the back, which immediately diminished the motions very much; and after the application of a second blister about the 24th, they entirely ceased. He remained very weak, and his left arm and leg were nearly paralytic, and he had very great pain on attempting to move them. There was not the least swelling in either limb, and the pain seemed very much like that of tic douloureux; and pressure on their nerves produced great pain. He took ten grains of carbonate of iron, and ten grains of powdered bark, three times a day for a fortnight. Under the use of these medicines the pains and paralytic affection gradually left him, and he has regained his perfect health.

Case of Internal Hernia occasioned by an unusual Cause. By T. M. Greenhow, Surgeon.

(From the same.)

Ellen Jordan, æt. 31, was delivered April 14th, of her seventh child. On the 24th I was requested to visit her, when I found her complaining of severe colicky pain with sickness, and slight soreness of the abdomen; which symptoms were entirely removed by active purgatives. Repeated doses of medicine were afterwards required to keep up the action of the bowels, but her recovery went on favourably in other respects. On the 3d of May she had a return of the colic which yielded to the former treatment. May 10th, at 3 *p. m.*, I was again requested to visit her; she had been rather unwell on the preceding day, but at 10 o'clock on that morning had had a distinct shivering fit, with excessive pain and tenderness of the abdomen, headach, and unremitting vomiting. Bleeding, purgatives, glisters, and warm baths were had recourse to in vain. The vomiting continued until within a few hours of her death; and no evacuation from the bowels took place. She died at 2 *p. m.* on the 11th, only 28 hours after the occurrence of the last acute train of symptoms.

Appearances on dissection 18 hours after death. There was considerable tumefaction of the abdomen, and putrefaction had already commenced. The small intestines were intensely inflamed, and in one part approached to a state of gangrene; their convolutions adhered firmly together. The omentum was much thickened and inflamed, and adhered very firmly to the fundus uteri,—indeed so firmly as to be quite inseparable without the use of the knife; it also adhered to the peritoneal covering of the brim of the pelvis, and embraced the colon and ilium so closely, as to insulate the cæcum, which was enormously distended, and formed a large strangulated internal hernia. The uterus had regained its natural dimensions; about two pints of bloody serum were contained in the cavity of the abdomen.

On inquiring into the history of this woman, I found that after the birth of each of her four last children, she had had attacks of peritoneal inflammation, as well as repeated threatenings, at least, of it during her last pregnancy. For some years she had felt a painful dragging sensation in the right iliac region, which induced her, in walking, to lean a little to that side, and was attended with a sensation of numbness in the right leg. During the same period she had occasional colics, and her bowels required the frequent assistance of purgatives. These circumstances render it probable that the adhesions between the omentum and fundus uteri, which constituted so remarkable a

feature in this case, had existed (in part at least) for a considerable length of time.

The mechanism of the hernia is not difficult to explain, although at first I felt considerably at a loss entirely to comprehend it. The omentum must have formed its adhesions to the fundus uteri, when the womb was distended by its contents during pregnancy, and its upper part was naturally brought into contact with the omentum. After delivery, the uterus, in contracting to its original dimensions, had dragged the omentum with it into the cavity of the pelvis. The omentum, thus displaced, formed a sort of bridge over the colon and ilium, and separated the cæcum from the rest of the intestinal canal. At every successive attack of inflammation its adhesions had increased, and it had become more dense in its texture, until the strangulation of the cæcum was completed by it.

The immediate exciting causes of the last attack, appeared to have been partly cold and partly indigestible food. On the 8th she had sat in her room while the floor remained wet after having been scoured, and had thrown aside a flannel bandage which had been constantly worn round the abdomen since her delivery; and on the same day she had eaten heartily of roasted sheep's heart at dinner. It is needless to offer any comment on the combined influence of these circumstances.

At each of my visits to this patient, her symptoms so nearly resembled those of strangulated hernia, that I was induced to make particular inquiries respecting the existence of any such tumour. And on dissection I was prepared to meet with some decided obstruction, probably, as I suggested to my pupils, a stricture or intussusception. Although I could not anticipate so unusual a state of disease, it was still very satisfactory to me to have the principle on which my views of its nature were founded so completely confirmed.

Newcastle upon Tyne, May 12, 1824.

Case of Puerperal Fever, successfully treated by Oil of Turpentine. By Henry Payne, M.D. Nottingham.

(From the same.)

I send you the particulars of a case of puerperal fever, which has just fallen under my care, with the view of establishing a different method of treating that disease, from that which, it appears, is still employed by many practitioners both in Edinburgh and London. The practice to which I allude, as employed in these cities, is blood-letting; but in justice to the Edinburgh physicians, it ought to be mentioned, that the lancet

is only recommended by them to be used in the earliest states of the disease, immediately after its commencement, and on no account after it has continued many hours. Whereas, according to the statement of a case published in the 11th Number of the *London* Medico-Chirurgical Review, that remedy is *there* repeatedly employed, even until after there is a prospect of a fatal termination of the disease.

The case of puerperal fever, of which I am now going to give you an account, occurred in a married lady living in this town, on Sunday the 19th of January, 1823, and I was requested to visit her in the afternoon of the 20th. At half-past 4, *p. m.*, I found her complaining of pain in the lower part of the abdomen, but most acute on the left side, nearly as low as the groin. The pain was much increased on pressure. There were much headach, urgent thirst, an intolerance of light, and great disturbance produced by the slightest noise. The pulse was 140, full and strong. There had been, just before my visit, some nausea and vomiting. I could not find that there had been any rigor, but a coldness of the lower extremities, creeping up the back, had been complained of. The milk appeared on the second day after delivery (which took place at 3 o'clock in the morning of the 15th), and the secretion of it continued. The lochial discharge had not been diminished since the commencement of the pain, which was first felt in the afternoon of the 19th, and appeared to come on from agitation and alarm, occasioned by some words that had been spoken in her presence, relative to a subject not necessary to be mentioned here. I understood that the labour had not been lingering. It was her first accouchement; but she had miscarried between the 2d and 3d month of pregnancy, four or five times. The patient is of a delicate and phlegmatic constitution. She has passed restless nights since her delivery, from the violence of the after pains, for which some medicines had been prescribed, supposed to be opiates. The bowels not having been opened since the 17th, and not considering the patient to be labouring under puerperal fever, which, as far as my experience goes, is preceded by a rigor, I only prescribed an opening mixture, composed of a decoction of senna and tamarinds, to which were added manna and sulphate of magnesia, one ounce and a half of which were directed to be taken every two hours. Thin gruel was ordered for diet, and the nurse enjoined to keep the patient as still as possible.

At 7 o'clock of the same evening, I visited the patient again. The pain had increased, and extended all over the abdomen to the back. No feces had been discharged. A common enema was ordered, and the mixture to be continued; only one dose had been taken at 6 o'clock. At 8 o'clock I repeated my visit.

The injection had produced two very copious motions, dark and fetid, and there was some abatement of the pain. The pulse as full as before, and 140 in the minute. As I was going out of the house, I was called back and requested to see the patient again, as she had become suddenly worse. She was labouring under a severe rigor. I ordered warmth to be applied to the back and legs, and the mixture to be discontinued. I then left her for an hour, expecting that, on my return, I should see a fully formed case of puerperal peritoneal inflammation.

At 9 o'clock, much heat had succeeded the rigor; the pain greatly increased; the whole of the abdomen very tender, and rather tumid; pulse 144, and very full. The lochial discharge was much diminished; the secretion of milk continued. Had the patient been bled in these circumstances, there would probably have been a total suppression of the one, and an interruption given to the secretion of the other. I have, besides, laid aside the use of the lancet for some years, in these cases. I therefore prescribed the following mixture.

℞ *Olei terebinthinæ rectificati* ℥iss. *Mellis despumati* ʒii. *Aquæ puræ* ℥ii. *ft. mistura, cujus capt. ægra partem 3tiam 2da quaque hora.*

I expected, as I had repeatedly experienced, that this medicine would produce a sufficiently antiphlogistic effect, and at the same time would impart such a stimulus to the constitution, as would serve to sustain the "*vis vitæ;*" for it should be observed that the patient, with all her inflammatory excitement, was complaining of extreme lowness, and felt as if she were sinking, which states conjoined, are characteristic of puerperal fever.

At 5 o'clock in the morning of the 21st, I found that a mistake had been made in exhibiting the medicine, one-third of the mixture was taken at 20 minutes past 10, and the whole of the remainder at 20 minutes past 12. I was rather pleased than otherwise at the mistake, well knowing that a speedier effect would follow. A *pot de chambre* was nearly filled with liquid feces, by the quick operation of the medicine. The patient looked pleasantly, saying, she felt quite relieved. The skin was bedewed with a copious perspiration, an effect which appears invariably to follow the exhibition of turpentine in cases of this description. Pulse 130, and soft; the secretion of milk and lochial discharge continue. She felt an appetite for food, but the same diet was ordered as before. Having to travel some distance from Nottingham, I did not see her again until 8 o'clock in the evening, but left directions to repeat the medicine every two hours, if the pain should return.

At 8 *p. m.* found the patient complaining of chilliness and of more pain; pulse 140; some headach. This partial return of the complaint was ascribed to the presence of more persons in the room than was desirable. Having felt herself much better, the patient wished to see some of her friends. I ordered the breasts to be drawn, and greater stillness to be observed. The turpentine mixture was directed to be given as before, none of it having been taken during the day.

At 8 in the morning of the 22d, learnt that the whole of the mixture had been given before 1 o'clock; after which the patient slept for four hours, and awoke with an appetite for breakfast. Pulse 120; slight pain of the abdomen on pressure. Several copious stools had been passed; also much urine, of a dark colour.

At 12 at noon, found the patient going on well; pulse 116. Has taken no medicine since last night, but left directions to give it should the pain return. Secretion of milk going on. Lochial discharge nearly ceased.

At 4 *p. m.*, the patient was complaining of more pain, the seat of which was confined to the neighbourhood of the left groin. She had been troubled with hæmorrhoidal tumours for some years, and they were now very painful, probably irritated by the action of the turpentine on the rectum. Pulse 126; some pain in the head, and thirst; has had no stool since the last visit. One dose of the turpentine mixture was ordered to be given immediately, and another at 5 o'clock; and at 6 o'clock four leeches were ordered to be applied to the hæmorrhoidal tumours, and the groin to be fomented.

At 8 *p. m.*, the four leeches had relieved the painful state of the tumours. The bites had not bled more than one hour. The first dose of the mixture had procured two very full motions. The second dose was rejected by vomiting. Pulse 118; skin cool; some pain in the head, probably occasioned by the turpentine, which may perhaps produce a determination to that part. Milk porridge was ordered for diet, in addition to gruel. The breasts had been drawn, and the secretion of milk was copious. Ordered the nurse to foment the abdomen for an hour, and the medicine to be discontinued. Lochial discharge very slight, and colourless.

January 23d.—At 8 *a. m.*, found the patient complaining of uneasiness and pain of the bowels, occasioned, as she thought, by distension from wind. She had slept well; the pain at the groin was much abated; pulse 118. Two pills, consisting of 5 grains of *extr. colocynth.*, and of 5 grains of *pil. cum hydr.* were ordered to be taken immediately; and in two hours after, one ounce and a half of the cathartic mixture, which had been prescribed at my first visit. The dose was ordered to be re-

peated in two hours. There had been one copious evacuation from the bowels in the night.

At 5 *p. m.*, I learnt that after taking the pills at 8 in the morning, the patient fell asleep, and slept until one in the afternoon; consequently, the last dose of the cathartic decoction was not taken until 4 *p. m.* Considerable debility was complained of. The pain and uneasiness of the abdomen were entirely gone. One stool had been passed, and with it much flatus had been discharged. Appetite improving, and she takes with a relish arrow-root, tapioca, and milk-porridge, alternately. Abundant secretion of milk; lochial discharge very trifling; pulse 114. Ordered the mixture to be discontinued.

At 9 in the evening, found the patient continuing to improve; pulse 108; much weakness is still felt; appetite good.

On my return from a ride into the country in the afternoon of the 24th, I learnt that a messenger had called, requesting my attendance on the lady as soon as possible. I had seen her in the morning, and found her going on well, although she had not passed a very good night.

At 5 *p. m.* I understood there had been considerable pain in the head, and some tendency to delirium. In order to discover if the turpentine had any share in producing this affection, I made particular inquiry as to any circumstances that might have arisen to create uneasiness of mind, and ascertained that she had been, on the preceding evening, indulging too freely in conversation on a subject that was distressing to her. Having therefore no doubt as to the cause of the disturbed state of the head, I prescribed ice and water to be applied to the forehead, and a dose of the cathartic decoction every two hours until my next visit. As the abdominal pain was entirely removed, some practitioners, on seeing approach the tendency to delirium, might suppose there was going to take place a metastasis to the brain; but being in the habit of seeing my puerperal patients recover under the use of the turpentine, I felt confident that these unpleasant symptoms would quickly be removed by the application of cold to the forehead.

At 9 *p. m.*, found the patient in a profuse perspiration. The cold applied to the head gave great relief, and she requested the constant application of the ice and water; pulse 108. Bowels had been well opened. Ordered that in future more attention should be observed to keep the patient quiet.

On the 25th, saw the patient twice. She made no complaint. The cathartic mixture was recommended to be taken occasionally. Has had but one stool. Prescribed four grains of calomel, and three of antimonial powder, to be taken at

bed-time, and four scruples of *pulv. jalap. comp.* early in the morning.

In the evening of the 26th, the patient complained of pain of the left side of the abdomen, near the groin; pulse 102; tongue clean; skin cool; appetite good. The pill and powder had procured several motions, which looked healthy. She asked my consent to apply some leeches to the part affected with pain, to which request I did not object. It appeared that the patient had received an injury on the left groin and hip a week or two before her accouchement. She was thrown down when walking, with considerable violence, by a man who was running in the street, and the part was severely bruised. She did not put herself under medical care at that time, nor was she bled; but a female friend advised leeches, which, however, were not employed, and it was owing to their having been recommended which induced her to request their application now. Local bleeding was therefore particularly indicated, and four leeches were directed to be placed on the part affected with pain. One drachm of a saline powder, consisting of one part of cream of tartar, one of nitre, and of two parts of gum tragacanth and of sugar, was also prescribed every four hours.

On the 27th, the four leeches had been applied, and there was a considerable discharge of dark coloured blood. She slept well; appetite good; weak broth allowed; pulse 98; no stool since yesterday afternoon. Ordered to take half an ounce of castor oil, and to repeat the dose at three in the afternoon, if the bowels should not be opened before.

January 28th.—Only one dose of the oil was found necessary yesterday. She has taken about two drachms of it this morning, which have procured one natural stool. The lochial discharge, which had nearly ceased, *but never entirely so*, appeared in greater abundance in the course of the night; pulse 96; is free of pain; appetite good; prescribed a box of opening pills, consisting of *extr. colocynth.* ℥ss. *Pulv. rhei.* ℈i. *Sapon. duri et pil. in hyd.* ā gr. v. into xii. pills, two of which were directed to be taken at bed-time occasionally. The saline powder and all other medicines to be discontinued.

Finding the patient, on the 29th, in a progressive state of amendment, and the pills agreeing well, I proposed discontinuing my attendance.

On the 31st I called on the patient, found her doing well, she having sat up the most part of yesterday.

In the above stated case of puerperal fever, it will be seen that the *oleum terebinthinæ* was given immediately on the invasion of the disease, and that it was the only antiphlogistic remedy that was relied on for the removal of it; the inflammatory

symptoms, moreover, being subdued by that potent medicine in the course of a few hours.

Nottingham, Feb. 1, 1823.

Political Medicine.

AEROSTATION.—DEATH OF MR. HARRIS.

"I beg leave, Mr. Editor, through your columns, to suggest a query or two, as to the immediate cause of death in the unfortunate aërial traveller, Mr. Harris. It was stated in the earliest accounts we received of the fatal accident near Carshalton, and corroborated by the evidence of the game-keeper on the inquest, that 'he heard a report resembling distant thunder, and on looking up at the instant in the direction of the sound, saw the balloon descending with great velocity, striking the branch of a tree in its descent; and on proceeding to assist the sufferers, he found the female almost in a state of insensibility, and Mr. Harris quite dead in the bottom of the car, with a black mark on his neck.'

"On reading the account, it struck me as extremely probable that the accident was occasioned by lightning striking the balloon, at the instant when the unfortunate man was opening the valve in order to make the descent. In such a case, there can be no doubt that the line connected with the valve (which is in the upper part of the balloon) would act as a *conductor;* and that the principal mass of electric fluid would pass through the arm and body of the sufferer, producing instant death to himself, and severe concussion in the person of his female companion.

"Without referring the accident to this source, it seems difficult to account for the instantaneous death of one party, or the insensibility of the other. Suppose the sternum and two or three ribs of the deceased to be broken, through the balloon coming in contact with the branch of a tree, it would not have produced death before a person would be able to go to the distance of forty or fifty yards, as stated by the gamekeeper in his evidence. On the contrary: supposing the accident to have arisen from a discharge of the electric fluid, we may account for the instantaneous death of the unfortunate man, and the dark mark observed on his neck—the skin always assuming a black or livid hue in the part of the body where a person has been struck by lightning. We may also account in this way for the pains in the back and limbs, of which the female complained on recovering animation—the electric fluid, as is well known, selecting

the nerves and spinal marrow as its immediate conductors, and thus producing instantaneous death, if sufficiently violent; or if less intense, occasioning a temporary paralysis in the patient, without either a fracture of the bones, or any other organic derangement.

"I was anxious to see the report of the coroner's jury on the event in question, as it appeared to me a proper subject on which to exercise a rigid examination for the benefit of medical science. But, without wishing to convey any censure on the coroner or the medical attendant on the occasion, they might certainly have gone a little farther, by the aid of better surgical assistance, in tracing the immediate cause of death in the case in question, than stating 'that death might have been occasioned by the broken ribs,' &c."

We shall leave the conjecture as to the mode of receiving the electric shock open to the observations of any of our correspondents,—hinting, on our own part, a doubt whether the passage of that fluid through the balloon, in the manner supposed, would take place without exploding the gas; and also whether the line in question be not composed of non-conducting material—as silk, for example. We consider this part of the subject fit for medical inquiry. It is of importance to human life; and we regret that our limits will not allow us to insert the remaining part of the communication here quoted.

As to the medical evidence, it seems to have served the purpose of an *inquest*, but not to have been much connected with *inquiry*. We have seen no satisfactory account of the matter, and therefore can do no more than assent to the opinion expressed above as to what might have been done in tracing the cause of death. It may be said that the case exhibited nothing mysterious, as regards the duty of the coroner; that there were witnesses enough to prove the circumstances, and that no surmise of criminal agency could possibly be formed. Granting all this, we still would say that, as it was judged necessary to call upon a medical practitioner for his opinion as to the cause of death, that practitioner should have taken all due pains to have formed one, and not have spoken so vaguely.

LEACH V. VEITCH.

It appears that Dr. Leach, late of the British Museum, had been afflicted with insanity, and placed under the care of Dr. Veitch, a regular physician, who, during the late war, had charge, under government, of naval lunatics at Hoxton and elsewhere. He was therefore a person properly qualified to treat

Dr. Leach, till proved otherwise. It appears, however, that during medical treatment, the patient, (who was kept in a cottage out of town) and some of his friends, conceived that unnecessary severity was exercised by Dr. Veitch's keeper, and improper remedies exhibited by himself. The patient was therefore removed from Dr. V's care, and an action was brought against him for the recovery of damages, on the abovementioned two counts.

As far as we can judge from the evidence as stated in the Medical Repository, for February last, neither of these charges was proved. The charge of cruelty was chiefly maintained by an *old woman* who could not possibly have seen any of the transactions which she came forward to prove, and some discharged, and consequently malcontent servants, whose motives were more than questionable—or rather they were unquestionably bad. On this point, however, we shall not dwell, as Dr. Veitch's personal character was not involved, but only his *responsibility* for the acts of his servant.

In respect to the medical evidence brought forward to substantiate the change of improper medical treatment on the part of Dr. Veitch, we must confess it does not altogether coincide with that liberality which we think one medical man should observe towards another, when called upon as a judge of actions and conduct which he did not witness, and therefore ought not to condemn, without knowing all the circumstances of the case, and all the indications which presented themselves to the former medical attendant. We shall give the two medical evidences, as stated in our cotemporary, leaving our readers to judge for themselves as to their ethical bearings. The first witness was Dr. Powell.

"He stated that when he saw Dr. Leach in July, 1822, soon after his removal from Dr. Veitch's, he found him in such a paralytic state as follows the use of mercury, and in a state of salivation; he thought him in extreme danger; he gave him *all the support he could* by nourishment and medicine. A *large* quantity of mercury would have produced the effect described, or a small quantity even in some constitutions. Being cross-examined, he admitted that he could not tell what had produced that state of the plaintiff's body—that exposure to cold, where no improper treatment had taken place, would produce the same effect. He further allowed, that if a patient were unwell in his body at the time he wanted to remove a mental malady, he would begin by eradicating the bodily disease; and if there was a liver complaint, he would take care to cure that before he made any other efforts." 173.

We really were not aware that *paralysis* is a usual sequence or consequence of the internal use of mercury, whether exhi-

bited for hepatitis (which was the case here) syphilis, or insanity. If Dr. Powell will please to refer to Dr. Burnett's paper in the Philosophical Transactions, and also in the last Number of this Journal, he will find as broad a scale of mercurialization as he can possibly desire, on board His Majesty's ship Triumph, of 74 guns, whose crew were salivated in the extreme—some of whom died of the salivation; and where even the sheep, pigs, goats, and poultry were mercurialized; yet no instance is related of paralysis following, as a consequence of salivation. So again, in India, where hundreds and thousands are annually salivated in hepatitis, dysentery, &c. we rarely or never see paralysis ensue. If, in certain trades, where men are long exposed to noxious mercurial vapours, we have paralytic affections, will any man of candour consider such cases analogous to that of a common administration of mercury in a hepatic affection? We cannot, then, but regard Dr. Powell's coupling paralysis with mercury, in the above evidence, as uncalled for in an ethical, and incorrect in a pathological point of view. Dr. Powell must be well aware that insanity is generally (we might say invariably) the consequence of *corporeal disease*, especially of the brain. Is not paralysis therefore more likely to result from this state of the sensorium than from mercury? We leave this question to the judgment of the profession at large.

After the *old woman* and the discarded servant, *Capper*, had given their evidence as to the *mala praxis* of Dr. Veitch, Dr. Sutherland was called forward.

"Then came Dr. Sutherland, who saw the plaintiff about the 14th of June, 1822, in a very weak state of health, apparently proceeding from the extremely frequent use of mercury. He changed the mode of treatment, and gave strengthening medicines. He considered the mode of treatment, *described by the last witness*, as most improper; but, being cross-examined, he admitted that he did not know the occasions on which the mercury was used, and could not therefore judge whether it was used improperly or not. The effect might have been produced on some constitutions even when used cautiously; and a short walk was very proper for persons in that state of health. Opening medicines were also necessary sometimes in these cases. Dr. Sutherland allowed Dr. Veitch to be a regular physician." 173.

In this, as in the former evidence, we see the same apparent want of delicate feeling at the beginning—and the same admission of exceptions, enough to eat up the evidence in chief, on cross-examination.

Our remarks are grounded, of course, on the *litera scripta* before us. If Dr. Powell and Dr. Sutherland considered the report of the case in the Repository as incorrect, it was their

place to contradict it. Not having heard of any such contradiction, we are bound to believe the statement to be true. We shall now give the evidence of Mr. Wardrop.

"Mr. Wardrop had known the defendant about eighteen years, who has applied himself to the care of lunatic patients about ten years. When he saw Dr. Leach first, he was greatly irritated, and suffered under a disorder in the liver; and in complaints of that nature mercury is frequently employed. He thought mercury fit for the case of Dr. Leach; and it produced a gradual amendment. He left Dr. V.'s care quite sane. In five or six months he returned to the cottage. Witness there attended him professionally, and observed the same symptoms as on the former occasion. Being consulted as to the use of mercury, *he recommended it to be employed with considerable vigour*. At this time the action of the liver was considerably deranged, and the mode of treatment adopted by the defendant was very judicious." 174.

The judge, in summing up, observed, that there was nothing imputable to Dr. Veitch himself, but only to his servant—thus completely absolving him from the charge of *mala praxis* brought forward by non-professional gossips, and, with shame and sorrow be it spoken, *countenanced* by the medical witnesses, who ought to have been the guardians of their brother practitioner's reputation! There were damages of 50 pounds awarded for "improper coercion."

An application was made for a new trial, with the view of falsifying the statements of the principal evidence, Capper; but from some legal informality the application failed. We shall conclude this article with one or two extracts from our respected cotemporary.

"Thirdly, The jury came to a decision, with which we cannot meddle—for that is matter of *law*—but as we shall take the liberty of meddling with the *physic* of the matter, we are disposed to say, that we cannot comprehend upon what evidence that decision was founded. We shall not suppose that the learned housemaid was their Pallas: perhaps it was Dr. Powell. This gentleman, however, did not see the patient until some days after he was removed from Dr. Veitch's care. At this time there was neither paralysis nor salivation, so that these must have come on after his removal. It was a great omission not to have asked the learned Doctor whether he had ever seen a case of insanity in which they made their appearance without the administration of mercury? We do not say that, if conscious of paralysis, and even salivation, belonging to the characteristics of this malady, he was bound *to volunteer* such a piece of information; but his evidence would have pleased us much better if he had, and we think would have been quite consistent with

his own character as to the official appointment he holds. There are few points in forensic medicine more interesting than the nature and the manner of evidence as given by medical witnesses; and when the interests of the Profession, which are those of humanity as well as of science, are at stake in the person of a brother member, we should expect that men of enlarged and cultivated minds—men of liberal sentiments, and just views of the dignity of their own situation, would put out of sight any little considerations of rivalry or personal dislike, and speak of each other with the respect that is, at least, becoming." 176.

"With regard to Dr. Sutherland, his testimony corroborated the opinion of Dr. Powell, as to the impropriety of the plan of treatment. But this gentleman seems to have been truly unfortunate in the grounds of his opinion. It would appear as if he formed it from the details afforded by a servant—and that a discarded one. In his cross-examination, also, he admits exceptions enough to eat up his evidence in chief. It is with no small regret that we find ourselves compelled to animadvert upon the TESTIMONIAL deportment of men of some eminence; but it has been the fate of the *most eminent* occasionally to have given too much scope for animadversion on similar occasions; and we will seize the occasion to say to our younger brethren, that, to us, who are in the habit of looking at medical Practitioners in the situation of witnesses, with a scrutinising eye, they appear in a disadvantageous light when they allow most important and most manifest parts of the truth to be wrung from them by a cross-examination. We know that even professional men are summoned by one of the litigating parties with the view of favouring that side of the case; but such considerations ought to be the farthest from the candid and independent mind, especially when called upon for an opinion, and not for a statement of facts." 176.

ACTION OF THE ACETATE OF MORPHINI* ON THE LIVING SYSTEM.

Having given an abstract of some investigations concerning the detection of this new poison, we are now enabled to add some conclusions concerning its action on the living animal system.† Six experiments were instituted on dogs and cats; and the quantity of the substance in question administered was from five to

* In the new edition of Magendie's Formulary, our colleague, Dr. Dunglison, has given sufficient reason for preferring this form of the word.

† From La Nouvelle Bibliothèque Médicale, Fevrier, 1824. The authors of the article are MM. Dupuy, Dequisé fils, and Leuret.

twelve grains by the œsophagus. In one instance we are vaguely informed that fifteen grains were injected into the œsophagus and rectum of a cat. In five of the cases part of the solution was quickly rejected by vomiting. Death occurred in three only (one of the cats, it should be observed, was twice submitted to experiment), and there is reason to doubt whether, in *one* of these at least, the fatal termination was not influenced or even caused by other means.

The first symptoms, after injecting the acetate of morphini (which we understand to have been in every instance dissolved in distilled water), seem to have come on in a very few minutes, and to have exhibited a speedy and considerable irritation in the circulatory system, accompanied with manifestations of nervous excitement. The pupils were dilated; tremors and convulsions soon followed; and these last generally continued to recur forcibly, either till the influence of the poison subsided, or till the death of the animal. The pulsation of the heart was, in five of the cases, very strong and frequent, diminishing gradually; anxiety and susceptibility of alarm at the slightest noise; restlessness; lethargy; feebleness; *purring* in some of the cats; and in several instances extremely fetid stools.

Besides these symptoms, which were common to all, there was a very striking phenomenon observed regarding the blood. In one of the cats, two hours after injecting the poison, and when the pulsation of the heart was strong, and that of the crural artery distinct, a transverse incision was made where the beating of this had been perceived. Not a drop of blood flowed, and the animal was, apparently, scarce sensible of the operation. The carotid arteries were cut through, and a small quantity of blood flowed; in bulk equal to three ounces of water, very thick, not of the usual bright colour of arterious blood, and quickly drying in the dish which received it.

On opening the bodies of the animals in which the experiment terminated fatally, no alteration of structure was discoverable. The digestive organs are particularly noticed as being sound; but in the membranes of the brain, the right cavities of the heart, and veins immediately in communication with them, was found black and liquid blood.

Mucous matter was found within the stomach, which being submitted to the test of nitric acid, was slightly tinged of a yellow colour; though the result of the application of this test was not sufficiently marked to lead to positive conclusions as to the identity of the acetate of morphina. The salt could not be obtained in the crystallized form; and the result was one in common with that which would be afforded by brucina and strychnina, when treated with nitric acid. The following mode

of distinguishing the former of these two last-mentioned from the other, and also from morphina, is noticed. Having treated brucina with nitric acid, the addition of proto-hydrochlorate of tin will produce a violet colour, while the others will yield a brownish colour. These are to be recognised by the symptoms they will respectively induce.

The following is the conclusion of the paper, embracing the inferences drawn by its authors from the previous details.

It was proposed, by these experiments, to determine,—

1. What is the effect of acetate of morphina on the mucous membrane of the stomach and intestines? The proof has been drawn that this substance causes no visible alteration there.

2. If the presence of the poison be discoverable in the digestive canal? In several instances it was distinguished in the stomach, but never in the intestines.

3. If the blood undergoes any alteration; and if, by means of chemical re-agents, any traces of the poison can be found in that fluid?

In this latter object the investigations were fruitless. As to the former, the temperature of the blood was discovered to be much below the ordinary degree in a dog just about to expire. The blood was very quick in a cat two hours after administering the poison; and in all the cases it appeared to be in very small quantity.

The paper concludes with a promise of further investigation, particularly of the substances excreted; and with a supposition, drawn from what has been already done, that this poison acts primarily on the nervous system. They confess that their proceedings are open to objections; and reserve the discussion of the question, Whether it acts on the sensibility or on the powers of motion? for another and more elaborate paper, to be produced without delay.

TRIAL FOR POISONING BY SULPHURIC ACID.

The following case is one of the best examples we have met with of the importance and efficacy of medical evidence in cases of murder by poisoning, when carefully collected by qualified persons. It does great honour to the medical gentlemen who were concerned in it; and will afford a pleasing contrast to the crude and unsatisfactory investigations which it is too often our lot to witness in judicial proceedings. The case is taken from a newspaper report (London Courier, 22d March), but it bears in every important particular the stamp of authenticity. Richard Overfield was indicted, at the Shrewsbury assizes, on the 19th

of last March, for administering sulphuric acid to his own child, an infant three months old. About eight o'clock in the morning of Sunday, 21st September, the child was seen in perfect health by a woman in the neighbourhood; but between 11 and 12 her attention was caught by the screams of its mother; and on entering the house, she found it apparently in great agony, and the mother holding it to her breast. Mrs. Overfield soon afterwards carried the child to a surgeon's. She was for some time in such a state of agitation, that she could not tell her errand; but at length she pointed to the child's lips, and desired him to put his tongue to them. He depones, "I did so, and found a very pungent acid taste, which no female milk could give. The lips were white and shrivelled, and had small blisters on their inner surface; and there were similar appearances on the mouth and tongue. The child was in violent agony, and tossed itself about, so that it was difficult to hold it steady." Concluding that it must have swallowed some acid, and probably oil of vitriol, he gave it magnesia suspended in water. He then attended the mother home, and there examined into the circumstances of the case more minutely. "I examined," continues he, "the clothes of the child, and those on which it lay; and on the child's frock (made of dyed cotton) I saw two or three red spots some inches from its mouth. In order to ascertain if those were recently made, I put my tongue to each, and each communicated an acid taste, such as I had felt in its mouth. About one the infant became unable to swallow; soon after it breathed with difficulty and noise; the extremities grew cold; and at three it expired." Another surgeon, the partner of the former, who saw the child at intervals, also depones to all the leading circumstances just mentioned. They examined the body together. "The lips were internally blistered, and externally of a dark colour; the gullet was contracted, and the internal lining corroded. The membrane lining the mouth and tongue was of a dull white colour. On laying open the cavity of the abdomen, a bloody coloured fluid escaped; nearly a pint which remained was preserved for analysis; and it proved to contain a considerable quantity of sulphuric acid, quite sufficient to occasion death. The great curvature of the stomach was corroded, and reduced to a dark substance resembling wet brown paper." (The expressions are not altogether clear; but we presume the stomach must have been perforated. The cause of the extensive injury of the stomach appears to have been, that the child never vomited.) A part of the contents of the stomach was likewise analyzed by a physician of the town of Shrewsbury, who agreed with the other witnesses as to the existence in it of a quantity of sulphuric acid, more than sufficient to occasion death.

The crime was traced most satisfactorily to the prisoner by various points of moral evidence; of which we shall mention one only, as it was in part supplied by the medical examination. He worked in a carpet manufactory, where he had access to the factory stores of sulphuric acid; and from the evidence of the superintendant, it is clear he understood its properties, though he repeatedly denied also either that he knew what it was. On the day of the child's death, about one o'clock, his next-door neighbour observed him walk down his garden, stoop close to a paling fence, and then return to the house. Next day another woman, while walking with the child's mother in the garden, found a phial lying on the other side of the pailing just where the prisoner had been seen to stoop. This contained a teaspoonful of a black liquid, which smelt very strong, and which was found by the medical witnesses to contain a large proportion of sulphuric acid. He did not attempt any defence. But on being asked before the trial what he had done to the child, he repeatedly said that "he had only knocked away the black cat, which had got up to the child's mouth, and brought foam up." The black cat was procured not long after the child was first observed to be ill, and the surgeon examined its mouth and paws, but could not detect any traces of sulphuric acid on them.

TRIAL FOR MURDER BY BLOWS ON THE HEAD.

We have received from Mr. Murray of Alford in Aberdeenshire, an interesting communication on the medical evidence brought forward on the trial of Charles M'Ewan, who was executed here last April for the murder of a woman. We should have been anxious to have related the case at full length; but could not have done so without entering into details, which our limits will not permit, and which, besides, would have wanted much of their intrinsic interest from the absence of some points of information, which cannot now be supplied. We shall therefore mention only the leading particulars of the evidence, so far as they are requisite to illustrate the opinions given by Mr. Murray on the trial, and to remove any unfavourable impressions that may have resulted from the unjustifiable distrust which these opinions appear to have been received by the Court. The dead body of the woman was found in a lonely part of a road in Aberdeenshire, in October last, on the morning after she had been seen alive in the prisoner's company. A considerable quantity of blood was observed around it; and on the head and upper part of the face there were seven contused

wounds, four of them curved, and from two to three inches long, three straight and slighter; and none of them had injured the subjacent bone. About half an ounce of fluid blood had been effused between the skull and dura mater (at what particular point our correspondent has forgot to mention). The stomach contained a quantity of fluid contents, apparently spirituous. Such were all the appearances of note found on the examination of the body, on the 13th of October, by Mr. Murray and Dr. Garioch, the medical inspectors. Fourteen days afterwards, the body was disinterred, and the wounds again examined by the latter witness alone, for the purpose of comparing them with a portable anvil found in the prisoner's possession, and supposed to have been the instrument of murder. This anvil was of a peculiar shape at one of its sides, and Dr. Garioch was of opinion, that two of its edges, of a concave form, correspond with some of the wounds. Mr. Murray, on the other hand, who had been absent at a distance when the second examination was made, deponed that, "although a certain part of the instrument might make an impression similar to the wounds, yet he did not think it *probable* the anvil could have been the weapon used, for the shape of its edge did not correspond with the respective depths of the several parts of the wounds." And he stated further, that "he was then (at the trial) less strongly inclined to believe that the anvil was the instrument of murder, than on a former occasion, when it was first shown to him; because he had previously a less exact impression on his mind of the nature of the wounds." The following opinion as to the cause of death was given by both witnesses, in their report at the precognition, and adhered to, with some trifling variation on the part of Mr. Murray, at the trial. "Though we are therefore unable to specify with precision the more *immediate* cause of death, we believe this to have arisen from the wounds; which opinion we found partly on the nature of these wounds, and partly on the absence of any other circumstance sufficient to account for death." Perhaps, this opinion, especially after the preamble with which it sets out, is a little too strongly expressed. Wounds of the mere integuments of the face and head, accompanied with so little internal hemorrhage, could have occasioned speedy death in one of three ways only; *first*, by causing fatal external hemorrhage, which was not proved either by the quantity of blood actually shed, or by the signs of exsanguification in the body itself;* *secondly*, in consequence of being accompanied with vio-

* The neglecting to ascertain the fact regarding this point, as Mr. Murray in his communication allows, was a material defect in the medico-legal inquiry. It appears to have arisen from the unfavourable circumstances under which the body was judicially examined.

lent concussion of the brain, which, considering the character of the wounds, was not probably a concomitant effect of the blows, and which, besides, though it had been produced, could not have been recognised in the dead body by any signs with which we are acquainted; or *thirdly*, in consequence of the co-operation of exposure to cold during the night, or her probable state of intoxication, or both together. This last appears to have been the most probable state of the matter. But, at all events, *no other cause of death having been detected*, a surgeon cannot but believe that the wounds must have been intimately connected with it in some way or other, since they must have been inflicted a very short time before it, and since the woman appears, from various circumstances, to have never moved from the spot where they were inflicted. The only part of the evidence, however, with which the Court expressed its dissatisfaction, was the opinion of Mr. Murray as to the improbability of the wounds having been inflicted by the anvil, together with his statement, that he had more doubts upon the matter at the trial, than when the anvil was first shown to him. The Judge represented himself as unable to comprehend how such a change could take place in any man's sentiments; and commented on Dr. Murray's evidence in terms peculiarly galling, and certainly most unnecessary. No medical man—no ordinary person of common intelligence should be at a loss to conceive, how his professional sentiments may undergo a most essential change on mature reflection. On this point, therefore, we need say nothing. As to Mr. Murray's actual opinion at the trial, we must remark, that we cannot well imagine how such an instrument as a portable anvil (the lightest of which weighs 3 or 4 pounds), in the hands of a man of so great muscular power as the prisoner, could have inflicted wounds accompanied with so little contusion, and altogether of so trifling a description as those found on the body of the deceased. And the reasons assigned in Court by the witness, if not sufficient to establish his opinion of *improbability*, were at all events substantial enough to entitle his statements to be received with the civility and respect due to a person of liberal education, who could have no possible interest in the case, and who had been commended by the Bench for his luminous evidence on several previous occasions. It was, besides, in our humble opinion, a point of little consequence, whether the anvil fitted the wounds or not, because they were evidently of such a nature as to have been also producible by a variety of other instruments. We may add, that the prisoner before his death, confessed his guilt, alleging, however, that he had committed the deed while in a state of intoxication, and ignorant of what he was doing. No notice was taken in the public prints of the manner in which he supposed he had done it; but Mr. Murray learned, by applying to the

clergyman who attended him, that "he was inclined to believe the wounds were made with a stick he carried, but was quite sure the anvil was not the weapon, because the box containing it had not been opened."

ATTEMPT TO POISON, BY ADMINISTERING POUNDED GLASS.

An idea prevailed long among medical men, and is still common among the vulgar, that pounded glass and small fragments of other hard and sharp-edged substances are poisonous. But recent experiments have shown the reverse. It is undoubtedly true, that if such substances as broken glass be swallowed in fragments of considerable size, they may produce serious injury by tearing and cutting the membranes of the alimentary canal, or by lodging in some part of it, and there constituting a source of perpetual irritation. Hence persons have been injured by attempting the wager of eating a wine-glass. Yet even that extraordinary amusement has been sometimes indulged in with impunity; of which an instance may be seen by referring to the article Spontaneous Combustion in the Foreign Intelligence of the present Number. As for glass reduced to fine powder, or even to small fragments only, repeated experiment on animals has proved, that it is absolutely inert. In an Inaugural Dissertation, published in Paris in 1820, by Le Sauvage, it is stated that two drachms and a half were given to a cat without injury; nay that a dog took six or seven ounces in eight days, without suffering the slightest inconvenience, although care was taken to administer it always while he was fasting, and although the fragments were frequently a line in length. Emboldened by these results, the experimenter himself swallowed a considerable number of similar particles, without sustaining any inconvenience. Dr. Paris, in his work on Medical Jurisprudence, has referred to the third volume of the Memoirs of the Academy of Pavia for an account of some experiments to the same effect by Mandruzzatto, an Italian physician. The qualities of this substance have come under the review of the Courts of Justice. Dr. Beck has given an abstract of a report by Professors Baudelocque and Chaussier, delivered at Paris in 1808, on the occasion of a trial for murder, in which the accused was supposed to have poisoned his wife with pounded glass. This substance was actually found in the stomach of the deceased; and the stomach, as well as the intestines, exhibited signs of great irritation. After a careful investigation of all that had been written by authors on the matter, they give their opinion, that pounded glass is not a poison; and suggest whether it might not have

come from some glass vessel broken by her teeth during the convulsions which preceded death.

We have given these short statements as an introduction and commentary on a short notice we have received from Dr. W. Turner, at Spanish-Town, Jamaica, of an attempt made by a negro woman to poison a whole family with pounded glass. The persons on whom the attempt was made were seven in number, the mistress of the family, four children, and two servants. A large quantity of the pounded glass was put into a dish of curried fowl, of which every one partook liberally. The fact being discovered towards the conclusion of the meal, excited much alarm; and the master of the family, who is a chemist and druggist, immediately gave all of them purgatives. In consequence, they all passed large quantities of coarsely powdered bottle glass. When Dr. Turner saw them four days after the attempt, none of them had suffered any inconvenience. This result amply confirms the opinions of the French Professors and the experiments of Le Sauvage.

MONUMENT TO THE MEMORY OF DR. BAILLIE.

No individual of the medical profession has ever received such posthumous honours from his brethren as the late Dr. Baillie. The Colleges of Physicians and Surgeons of London have each of them voted a bust, to be executed by Chantry, and placed in their halls; and the Medico-Chirurgical Society propose to have a portrait of him for their library. The members of the medical profession throughout London have likewise resolved to set on foot a subscription, with the view of erecting a monument to his memory in St. Paul's or Westminster Abbey; and at the last general meeting of Subscribers on the 28th April last, the amount of subscriptions was announced to be £700. We need scarcely add, that the list already includes many of the most distinguished names in the metropolis. A committee of 21 members has been chosen for promoting the subscription and carrying its intention into effect. It is composed of Drs. Maton, Warren, Babington, Hooper, Gooch, Paris, Latham, Somerville, Yeats, Sir J. Mac Gregor, Sir A. Cooper, Messrs. Brodie, Pennington, Tupper, C. Bell, Clarke, Hollings, Alexander, Cline, Travers, Abernethy. All members of the Profession throughout the United Kingdom are invited to second the Committee's views; and no doubt is entertained, that the required amount will be shortly completed.

Medical and Philosophical Intelligence.

*Therapeutical Physiology, or Medical Miracles.**—Who has not heard of the wonder-working prayers of Prince Hohenloe? Are we to consider these cures as falsehoods, and the parties, active and passive, as impostors? We are not of that opinion. We believe that some—perhaps most—of the cures were actually performed, and that through the agency of mind on matter. We cannot be so uncharitable as to suppose that the patients have wilfully deceived the world, however they may be deceived themselves in respect to the interference of a supernatural power in their behalf. We dare not say so much for the INTERCESSOR. And yet it is possible that Dr. Hohenloe may be so vain and superstitious as to believe he has the ear of the Almighty in Heaven, in the same way as subjects are supposed to have the ear of Majesty on Earth.

These miraculous cures have not excited much attention in this country. They served to fill columns in the newspapers, and make the vulgar stare; but the philosophic part of the community looked upon them as the mere workings of the imagination on the corporeal fabric, instances of which are every day presented to the attentive observer. In Ireland, however, where the odium theologicum is heightened by the odium politicum, these occurrences have become a new cause of dissention, and have been discussed with all the bitterness of religious and political animosity.

The plenitude of power, in the miracle line, so long claimed by the Church of Rome, has dwindled, in modern times, to a very low ebb indeed. Is this to be attributed to the increase of *faith* in mankind, rendering divine manifestations unnecessary? or is it to be placed to the account of a prudent reluctance on the part of the priesthood to appeal to *miracles* in so *inquiring* an age as the present? Be that as it may, the exploits of Prince Hohenloe have revived the drooping spirits of the Roman Catholic clergy, whose bishops, in their pastoral letters, "*announce, with great joy, a splendid miracle which the Almighty had wrought even in our own days, and in the midst of ourselves.*"† This "splendid miracle," which we expected could not be less than a conversion of the river Shannon into claret, at least, resolves itself into the simple fact that, a young lady, Miss Lalor, recovered the use of her tongue after the dreadful punishment of six years' silence! We have little doubt that Miss Lalor will

* An attempt to explain, on natural principles, the cures alleged to be miraculous, of Miss Lalor and Mrs. Stuart. By a Physician.

† Bishop of Leighlin and Fernes' pastoral letter.

make up for loss time, now that she has recovered the use of such an important organ.

The pastoral letter of Bishop Doyle was soon followed by another from the pen of Archbishop Murray, announcing the miraculous cure of a nun in the convent of Ranelagh, effected "*by the supernatural interference of the divine power, through the intercession of Prince Hohenloe.*" The *credibility* of this last miracle is attempted to be strengthened by certain medical testimonies. According to Dr. Mills, "the complaint (of the Ranelagh nun) was generally of an apoplectic tendency;"—while, by Dr. Cheyne, the lady is described "*as being an ailing person, having laboured under determination of blood to the head, and various* NERVOUS *affections of an* ANOMALOUS *character.*"

From this statement, not very *clear* in itself, it must be perfectly clear to our readers that the Ranelagh nun was a most excellent subject for a miracle. We accordingly find her "a great sufferer" on the 31st of July; but, mirabile dictu! on the 4th of August, she "*assured her physicians that she was without complaint.*" Why, the passage of the Red Sea by Moses, or the supply of manna to the Israelites in the wilderness, was nothing compared to this!

That the splendour of such a miracle should dazzle the optics of the Catholics is not to be wondered at; and accordingly they see nothing in the transaction but "the finger of God"*—a proof "that the Almighty God had thus visited his people, reanimating their faith, and reviving their hope."† Yet there is a party of reasoners in the Emerald Isle, who, scorning all reference to natural principles, freely admit the reality of the miracles, but discover in them, not "the finger of GOD," but of "the DEVIL;" "to whom (it seems) the exertions of the Bible society have given a most serious alarm," and therefore his Satanic majesty is lending a hand to the Catholics, whose object, of course, is to keep people in the dark! We accordingly find a red hot SAINT from the Bible Association assuring his reverend antagonist, Bishop Doyle, "that he has *great pleasure* in the miracles, inasmuch as it is evidence that the church whence they proceed is the MOTHER of HARLOTS!!"

As we can have no hope of reconciling these ultra-superstitious parties to one another, we shall leave them to debate on the celestial or infernal origin of the miracles, while we revert upon our former declaration, (which is also the creed of the able author of the pamphlet before us,) namely, that the cures were real—not through the intercession but the *influence* of the Prince Hohenloe—and that the patients were not impostors. It is melancholy, however, to think that, in the present enlightened æra, there should be numbers of people, among the learned

* Archbishop Murray's letter. † Bishop Doyle's letter.

bodies too, so superstitious or rather so insane as to believe that there are individuals on this little obscure planet who are taken into the councils of the Omnipotent Creator—

"————————————Chosen from above
"To work exceeding miracles on earth."

Our author accounts for these supposed miracles in the only rational manner, by referring them to the great influence which moral emotions exert over the functions and even the structure of the body.

"But there are certain moral feelings which have a power not only to derange the *functions*, but to destroy the *structure* of certain organs; thus, long protracted grief produces diseases of the liver, heart, and lungs; and the anatomist who examines the body which has sunk under the workings of a wounded spirit, will find the sentiment embodied in the disorganized liver, the tuberculated lungs, or the flaccid and extenuated heart. Again, diseases of physical origin in the heart, liver, or lungs, excite the corresponding moral affections with which these organs are associated; thus, a palpitating heart fills the bosom with vague terrors; and a torpid liver entails all the horrors of hypochondriasis.

"The yellow bile that on your bosom floats,
"Engenders all those melancholy thoughts."—DRYDEN.

If the moral emotions be capable of producing disease, they may also, under certain circumstances, be capable (though more rarely) of effecting cures—especially where there is no organic disease; and no instance of organic disease has been proved in any of the patients. It may be remarked, that it is almost invariably women (who are far more susceptible of moral impressions than men) who have been the "chosen vessels" for enthusiasm, and the most approved subjects for delusion. It was well observed by the sagacious Selden, that "when priests come into a family, they do as a man who would set fire to a house—he does not put his torch to the brick wall; but he thrusts it into the hatch—*so the priests work upon the women, but let the men alone.*"*

In the cases of Miss Lalor and Mrs. Stuart, our author could not discover any evidence whatever of change of structure, but merely long continued *nervous affection*—a sufficient explanation of the *suddenness* of the cure. It is difficult to conceive (as our author well observes) a situation better calculated to exalt the imagination, and engross every faculty of the soul, than that of a young enthusiast, who, hopeless of relief from severe suffering, throws herself on the Divine mercy, believing that at *that instant* her case is specially commended to his mercy by one who has already found favour in his sight. She feels that her

* We have lately had a miracle performed in the District of Columbia, by this —— prince.

fate is in suspense—adds prayer to prayer—finds her enthusiasm increase and her corporeal sufferings consequently diminish—imagines the Deity as relenting—and at length sinks to the ground, overwhelmed by the force of her gratitude and her love.* No wonder that such a mortal conflict should occasionally work a revolution in the nervous system of a hysterical or hypochondriacal female. And this is the whole secret.

We would add one word of advice to our brethren. They should never, on any account whatever, give oral or written testimonies that can, in the remotest manner, countenance these delusions. We do not, for a moment, suppose that such respectable physicians as Drs. Cheyne and Mills have given improper testimonials—but we do think that it was imprudent to give any testimonials at all. No physician should suffer his name to appear in connexion with superstitions that disgrace the age in which we live. These things should be left to needy, ignorant, and unprincipled adventurers, who, as in Johannah Southcoate's case, caught at the tide of popular credulity, to raise themselves into temporary notice—soon to sink beneath its waves in utter contempt, never to rise again!

The illustrations, which our author appends to his little work, of the influence of the mind over the body, are apposite enough, and might be extended *ad infinitum*. We return him many thanks for his ingenious and entertaining pamphlet.

—

Loss of Speech and Hearing.—Mr. Thompson, of Whitehaven, has related a curious case of this kind in the April number of the Medical Repository. A female child, in her 18th month, was suddenly seized with convulsions, after which she was observed to have lost her speech and likewise her hearing. But her vivacity remained, and her health was unimpaired. In this state she continued till her sixteenth year, when, after the noise of a public rejoicing, she was observed to have recovered the sense of hearing, and soon after she began to articulate, but made slow progress.

—

Rudiments of a Fœtus in the Abdomen of a Boy.—We have never attached much importance to the marvellous in medicine. They are far more curious than useful. They sometimes illustrate Physiology; but are incapable of contributing to the improvement of any other branch of medical science. Cases of monstrocity, for instance, are more eagerly listened to than the most instructive cases of pathology; and therefore we must sail occasionally with the current of human curiosity, though we shall indulge that passion rather less than some of our neighbours. The fœtus found in the abdomen of a boy, in this coun-

* Mrs. Stuart's affidavit.

try, a few years ago, excited nearly as much attention as Bonaparte's return from Elba, and since that period several other remarkable localities for the germ of man have been discovered. A case was lately read at the Medico-Chirurgical Society of the rudiments of a fœtus in the thorax of a woman who was supposed to labour under disease of the heart. At length an abscess burst, and discharged a misshapen mass having jaw bones, teeth, and other portions of human structure in its involucra. The able author of the paper now before us [M. Breschet] has also transmitted to the same society a drawing of a fœtus found in the substance of the uterus itself, whither it had doubtless made its way from the fallopian tube, in its descent from the ovary to the cavity of the womb.

The case before us happened several years ago, but the particulars have never before been regularly published.

Case. Amedée Bissieu was born in the year 1790, during the storms of the revolution, by which his mother was greatly agitated while pregnant. The child was very feeble, but lived. From the time he was able to speak, he complained of pain in the left side of his chest and abdomen, which side was more protuberant than the right, giving rise to suspicion, at one time, that there was curvature of the spine. The young Amedée, however, grew up, went to school, and even became an expert rider. He still complained of his side. When in his 14th year he was suddenly seized with acute pain in the left side and left hypochondrium, accompanied by fever. A tumour now appeared in the lower part of the abdomen, for which he was bled and purged. The fever continued, and the tumour made progress. On the seventh day of this attack, M. Blanche, a surgeon, examined him, and ascertained the existence of a tumour the size of a melon in the left side of the abdomen. The youth died in the same year, six months from the invasion of the last attack, worn out, of course, with hectic fever.*

On dissection, a large membranous pouch was found, adhering to all the neighbouring parts, and particularly to the colon, between which and the pouch there was a communication. When the pouch was opened it was found to contain a purulent looking fluid, and two bodies of nearly equal size. One of these consisted of hairs matted together, and formed into a ball the size of a man's fist. The other was an imperfect fœtus, consisting of flesh, bones, &c. covered with skin. From the middle of this mass a short and thick ligament passed to the parietes of the cyst, to which it was attached.

Some doubts having been expressed by the faculty respecting the sex of Bisseau, the corpse was afterwards disinterred and

* Six weeks before the patient's death he passed by stool a small ball of hairs.

minutely examined, when there was not found any thing to disprove his being of the masculine gender.

—

Hydrophobia.—John Brassendale, 30 years of age, was bitten by a dog, which, four days afterwards, was killed with symptoms of madness. Caustic was liberally applied to the wound, three days after the bite. On the 28th of October the man showed difficulty of swallowing, and unequivocal hydrophobia was too soon developed. Purgative glysters, laudanum in large doses, the warm bath, blisters to the chest, the muriatic acid, &c. were tried without effect.

Dissection.—In the head nothing particular was observed, except a slight distention of the vessels of the pia mater. The mucous membrane of the larynx and trachea was red with turgid vessels. The inner surface of the œsophagus presented marks of phlogosis. In the stomach inflammation had run on almost to sphacelus. In the jejunum also were spots of a similar description.

In another case of hydrophobia which came under Dr. Bardsley's care in the Manchester Infirmary, death took place on the seventh day from the commencement of pain in the bitten part, and 56 hours after the symptoms of unequivocal hydrophobia had been developed. In this case there was turgescence of vessels about the basis of the brain, with some effusion there. No inflammation in the pharynx, larynx, or trachea. The internal membrane of the œsophagus and stomach was inflamed and studded with purple spots.

—

Cases of Neuralgia simulating Disease of the Brain.
By Dr. MARTINET.*

Sudden and temporary attacks of *paralysis* are very embarrassing to the practitioner sometimes. We so generally associate the idea of paralysis with pressure on the brain or spinal marrow, that we usually take a gloomy view of such cases; and yet they are not always dependent on cerebral disease—at least that kind of disease which produces apoplexy and regular paralysis. Rheumatism, affections of the digestive organs, and even mental emotions, seem occasionally to determine these paralytic seizures.

Case 1. A woman, 60 years of age, enjoying good health previously, and leading a sedentary life, was taken all at once, on the 1st of June 1822, with considerable loss of power of the right lower extremity, attended by a pain running in the direction of the sciatic nerve. On the 10th of the same month she

* Revue Medicale, Janvier, 1824.

complained of dull pain and sense of formication in the lumbar region of the same side. On the 12th, she felt darting pains radiating along the temple, forehead, and superior palpebra of the same side. On the 15th there was drawing of the mouth to the left, while the inferior jaw was also distorted from its usual apposition to the upper. On the 16th there was embarrassment of speech, the mouth being still more drawn to one side, with superficial pain, at intervals, in the facial nerves of that side. There was no febrile movement in the system; but the appetite was impaired. An emetic of ipecacuan was exhibited, and operated well, but produced no effect on the complaint. On the 17th the mouth still drawn—difficulty and pain in moving the right thigh—painful dartings along the scalp, and deep-seated pain in the right side of the head. These symptoms continued unchanged for three days. 21st. Tongue coated; uneasiness at the epigastrium; the other symptoms still persisting. Ten leaches to the anus—purgation by sulphate of soda. 22d. Mouth less drawn—speech more distinct—diminution of hemicrania and facial pain—no difference in the loins, thigh, and leg. Eight leeches behind the right ear—the same number to the loin—and a purgative of sulphate of magnesia. In ten days more the whole of the symptoms had gradually disappeared.

Dr. Martinet comes to the conclusion, that these phenomena could not have depended on affection of the brain, but on neuralgia. "The same cause," says he, "which exalted the sensibility of the sciatic, lumbar, and facial nerves, determined paralysis of the small branches going to their respective muscles." The absence of paralysis in the upper extremity is also in favour of our author's pathology; for where the brain is in fault, the paralysis usually shows itself first in the thoracic members.

Case 2. Louis-Joseph, aged 59 years, had been subject to irregular attacks of pain in his head from the age of 30. He had also occasional fits of palpitation, augmented by work (he was a copper-founder) and various moral affections. In the month of September last his head-ache increased, and on the 25th he was seized with the following symptoms, while going up to his work-shop:—general shivering—increase of the cephalalgia—embarrassment of speech—sudden pain in the cheek, temple, arm, thorax, and lower extremity of the left side, with sense of formication and considerable diminution of muscular power, so that he was obliged to be carried back to his apartment. In a few days these symptoms so far subsided that he tried to walk out a little, but was soon visited with a return of all the symptoms above described. On the 1st of October he entered the Hotel Dieu. Here the symptoms continued for several days, but gradually diminished, and at length entirely dis-

appeared, under mild diaphoretics, and the application of fumigations to the side affected. M. Recamier, under whom the patient was, did not hesitate to consider it as neuralgia, having seen several other cases of a similar description, all of which got well by fumigations. We would only just remark that, when the symptoms are equivocal at first, the safest plan would be to act as if the brain were the organ in fault. Evacuations can do little harm, for a while at least, in neuralgia, but the neglect of them might be of the worst consequence in cerebral affection inducing paralytic symptoms.

—

Inflammation of the Semilunar Ganglia.—Professor Lobstein has written largely on the structure, use, and diseases of the great sympathetic; an excellent analysis of which work is given in the February and March numbers of our respected cotemporary, the Medical and Physical Journal. From the pathological portion we shall make some extracts.

Among the diseases connected with, or dependent on, morbid conditions of the great sympathetic, Professor L. ranks hypochondriasis, hysteria, melancholia, mania, angina pectoris, asthma, &c. Primary disorder of the ganglionic system will also induce, sympathetically, hemicrania, tinnitus aurium, and various other affections. We shall now extract a few cases where dissection came to the aid of observation during life.

Case 1. A female had suffered from spasmodic and hypochondriacal symptoms from the age of puberty, and had had two incomplete apoplectic seizures, with slight subsequent paralysis. She got married, and became pregnant. In the 8th week of utero-gestation a most obstinate and severe gastric irritability came on, in consequence of which she could keep no food whatever on her stomach for the ensuing three months, at the end of which she died. The internal fauces and mouth became inflamed, and ultimately mortified, from the constant vomiting. But the most distressing symptom was a burning pain along the course of the spine, and in the lower part of the right hypochondrium, producing continual jactitation and exhausting the patient's strength. The lady died at the end of the fifth month of pregnancy—not having received any relief from medicine. An attempt was made to produce abortion, but failed.

Dissection. The brain was sound, as were also the thoracic viscera. The stomach presented no morbid appearance, although there had been black vomiting. No disease could be discovered in the intestines nor in the uterine system, except some fibrous tumours in the substance of the womb, the size of walnuts. The fœtus was healthy, and in its natural position. The viscera were all removed, and the semilunar ganglia cut out. "It was not, indeed, converted into a foreign substance,

but its colour was intensely red, which was regarded as true and genuine inflammation, by some men of experience and great cultivators of anatomy, to whom I communicated this observation. The inflammation was so obstinate, that the ganglia were but little paler after three days' infusion in cold water; and I took care to have the right ganglion drawn in this state, and represented in the seventh plate of this treatise. Its upper part is of a vivid red; but the inferior, from whence the mesenteric branches go off, is more livid. The splanchnic nerve appeared to me much broader than usual before its entry into the ganglion." The author conjectures that this inflammation had been long present, in a chronic form, giving rise to the hypochondriacal affections above alluded to. To this inflammation he also attributes the burning pain along the spine. The spinal cord does not appear to have been examined.

Case 2. The body of a girl was examined, who had been attacked with epidemic cough, which was converted by metastasis, first into spasmodic vomiting, and then into convulsions that could not be overcome by any remedial agents. In this case the left portion of the solar plexus was inflamed. The part was steeped for some days in water, at the end of which the redness had passed into a yellowish tinge, confined to the portion supposed to be inflamed.

—

Cubebs in Gonorrhœa.—Dr. Crane, of Boston, Lincolnshire, has published some observations on the treatment of gonorrhœa by cubebs, in the last number of our Northern cotemporary. He observes, what is very true, that in most instances, the urine smells strongly after a few doses of the cubebs are taken—the discharge decreases—and the heat of urine is much relieved. It rather opens than confines the bowels—if otherwise, a few grains of blue pill, at bed time, will be proper, with a saline aperient in the morning. This medicine generally improves the appetite and exhilarates the spirits. In two cases, it produced irritation and mental anxiety. Small doses, he thinks, are of no service: the powder must be taken "in doses of from two to three drachms each, three or four times a day." In this we cannot agree with our author. Within the last month we have completely cured two cases of smart gonorrhœa by drachm doses thrice a day. In fact, the powder is so light and bulky that two or three drachms are not easily got down. Cold water is as good a vehicle as any. When the gonorrhœa is removed, the cubebs should be continued for ten days or a fortnight, gradually diminishing the dose. Sometimes a thin bluish coloured gleet, in small quantity, remains and cannot be removed by a continuance of the cubebs. In these cases, a weak solution of the sulphate of zinc injected twice or thrice a day, will prove

appeared, under mild diaphoretics, and the application of fumigations to the side affected. M. Recamier, under whom the patient was, did not hesitate to consider it as neuralgia, having seen several other cases of a similar description, all of which got well by fumigations. We would only just remark that, when the symptoms are equivocal at first, the safest plan would be to act as if the brain were the organ in fault. Evacuations can do little harm, for a while at least, in neuralgia, but the neglect of them might be of the worst consequence in cerebral affection inducing paralytic symptoms.

—

Inflammation of the Semilunar Ganglia.—Professor Lobstein has written largely on the structure, use, and diseases of the great sympathetic; an excellent analysis of which work is given in the February and March numbers of our respected cotemporary, the Medical and Physical Journal. From the pathological portion we shall make some extracts.

Among the diseases connected with, or dependent on, morbid conditions of the great sympathetic, Professor L. ranks hypochondriasis, hysteria, melancholia, mania, angina pectoris, asthma, &c. Primary disorder of the ganglionic system will also induce, sympathetically, hemicrania, tinnitus aurium, and various other affections. We shall now extract a few cases where dissection came to the aid of observation during life.

Case 1. A female had suffered from spasmodic and hypochondriacal symptoms from the age of puberty, and had had two incomplete apoplectic seizures, with slight subsequent paralysis. She got married, and became pregnant. In the 3th week of utero-gestation a most obstinate and severe gastric irritability came on, in consequence of which she could keep no food whatever on her stomach for the ensuing three months, at the end of which she died. The internal fauces and mouth became inflamed, and ultimately mortified, from the constant vomiting. But the most distressing symptom was a burning pain along the course of the spine, and in the lower part of the right hypochondrium, producing continual jactitation and exhausting the patient's strength. The lady died at the end of the fifth month of pregnancy—not having received any relief from medicine. An attempt was made to produce abortion, but failed.

Dissection. The brain was sound, as were also the thoracic viscera. The stomach presented no morbid appearance, although there had been black vomiting. No disease could be discovered in the intestines nor in the uterine system, except some fibrous tumours in the substance of the womb, the size of walnuts. The fœtus was healthy, and in its natural position. The viscera were all removed, and the semilunar ganglia cut out. "It was not, indeed, converted into a foreign substance,

but its colour was intensely red, which was regarded as true and genuine inflammation, by some men of experience and great cultivators of anatomy, to whom I communicated this observation. The inflammation was so obstinate, that the ganglia were but little paler after three days' infusion in cold water; and I took care to have the right ganglion drawn in this state, and represented in the seventh plate of this treatise. Its upper part is of a vivid red; but the inferior, from whence the mesenteric branches go off, is more livid. The splanchnic nerve appeared to me much broader than usual before its entry into the ganglion." The author conjectures that this inflammation had been long present, in a chronic form, giving rise to the hypochondriacal affections above alluded to. To this inflammation he also attributes the burning pain along the spine. The spinal cord does not appear to have been examined.

Case 2. The body of a girl was examined, who had been attacked with epidemic cough, which was converted by metastasis, first into spasmodic vomiting, and then into convulsions that could not be overcome by any remedial agents. In this case the left portion of the solar plexus was inflamed. The part was steeped for some days in water, at the end of which the redness had passed into a yellowish tinge, confined to the portion supposed to be inflamed.

—

Cubebs in Gonorrhœa.—Dr. Crane, of Boston, Lincolnshire, has published some observations on the treatment of gonorrhœa by cubebs, in the last number of our Northern cotemporary. He observes, what is very true, that in most instances, the urine smells strongly after a few doses of the cubebs are taken—the discharge decreases—and the heat of urine is much relieved. It rather opens than confines the bowels—if otherwise, a few grains of blue pill, at bed time, will be proper, with a saline aperient in the morning. This medicine generally improves the appetite and exhilarates the spirits. In two cases, it produced irritation and mental anxiety. Small doses, he thinks, are of no service: the powder must be taken "in doses of from two to three drachms each, three or four times a day." In this we cannot agree with our author. Within the last month we have completely cured two cases of smart gonorrhœa by drachm doses thrice a day. In fact, the powder is so light and bulky that two or three drachms are not easily got down. Cold water is as good a vehicle as any. When the gonorrhœa is removed, the cubebs should be continued for ten days or a fortnight, gradually diminishing the dose. Sometimes a thin bluish coloured gleet, in small quantity, remains and cannot be removed by a continuance of the cubebs. In these cases, a weak solution of the sulphate of zinc injected twice or thrice a day, will prove

efficient. Our author remarks, that if no good effect be produced by the cubebs in eight or ten days, it will be useless to continue the remedy. A combination of balsam copaiba is an exceedingly nauseous medicine, in Dr. Crane's opinion. We have found it useful, on several occasions, to exhibit the balsam as well as the cubebs in gonorrhœa, which is one of the most troublesome complaints which the medical practitioner has to deal with. The balsam is best borne at night going to bed in the dose of a good-sized tea-spoonful. The cubebs may be taken through the day. In all cases, we find low living and quietude hasten the cure.

—

Cubebs in Chronic Rheumatism.—Accident led Dr. Crane to employ cubebs in this almost incurable complaint. In a few instances it proved beneficial—in others, it gave no relief. It must be continued for some time to produce effect.

—

Treatment of Typhus Fever.—In the March number of our respected cotemporary, the Medical Repository, Messrs. Parkinson have recommended a plan of treatment of typhous fevers, somewhat different from any that have lately been proposed.* It bears the nearest analogy to the *gestation in the open air*, mentioned by Celsus, and put in practice by Dr. Jackson. Messrs. Parkinson are surgeons to a pauper institution, and their plan is as follows:—"immediately on application for relief the patient is conveyed to the fever-ward. The body is then cleansed; and, if required, the warm-bath is employed, the hair either thinned or entirely removed, and clean body linen, with an upper clothing of woollen, put on. Bleeding, if required, is then employed; and an emetic, or cathartic, if hitherto omitted, and now required, is had recourse to, the cathartic medicine being repeated as circumstances may require. A blister is applied to the nape of the neck, and in the neighbourhood of any part in which congestion is threatened. The patient is then seated in a chair with a railed back, so high as well to support the head whilst leaning backwards; the legs, if required, being supported horizontally at a convenient height, and he is then placed in the current of fresh air passing upwards from the windows and the lower parts of the building through the openings in the ceilings and roof. As the patients gain strength, they are allowed to change their situations, either towards or from the windows; and, when able, which, in general, is within two or three days, they are permitted to walk about the ward; but are very rarely allowed to lay on the bed in the day-time.

* It appears to have been recommended by the late Dr. Lettsom, in one of the volumes of the Medical Society's Memoirs.

"The regimen is composed of tea, toast-water, barley-water, gruel, milk-pottage, and, as the tongue becomes clean, broth is added; but beer, wine, &c. are prohibited through the progress of the disease, and even of recovery.

"The beds and pillows, with a view to prevent the accumulation of heat about the head and trunk, are loosely filled with straw. The patients are requested to lay as much as they are able on their sides, and are required to quit their beds by nine o'clock of the morning. The advantages derivable from this arrangement, as well as from the exclusion of the patients from their beds during the day-time, will be perceived, on ascertaining, by interposing the hand between the back of the patient and the subjacent bed-clothes, the vast degree of heat which is there accumulated.

"The results from this mode of treatment have been extremely satisfactory. Direct amendment and speedy recovery have been obtained in a very large proportion of cases. Out of 187 patients, only five were lost: two of whom were between seventy and eighty years of age; two others were reduced to a hopeless state of weakness previous to their application; and one sunk from extensive sphacelations, induced by previous long-continued confinement to her bed.

"Such success excited the hope that, by avoiding stimulants, opening the bowels, keeping the patients in an *erect position, and allowing the free access of cold air*, the destructive powers of this malady might be effectually opposed. A longer trial has not only confirmed this hope, but made it appear to be a duty to make known the results in those cases in which it has been employed." 199.

Our authors observe, "that corresponding success is very seldom obtained when the attempt is made in the chambers of those who are surrounded by the luxuries or even the comforts of life." We object not to the cooling mode of treatment recommended above; but we confess we cannot see on what principle the utility of the upright posture can be explained. Coolness enough might be obtained without this; and whoever has laboured under fever must remember what distressing sensations and increased velocity of pulse are occasioned by the perpendicular posture. We bow, however, to the authority of *facts*, if experience shall prove them such in the hands of the many.

—

Contra Ptyalismum.—We all know that hitherto nothing has been found effectual in reducing the action of mercury on the salivary glands, when ptyalism has once taken place, but time. Neither do we think that a constitutional afflux of this kind could be checked, by external means at least, with safety to the

patient. Solutions of the acetate of lead have been recommended as gargles. More recently Dr. Kreugerhausen, of Gostrow, affirms that he has, in many cases, quickly suppressed mercurial ptyalism by tar, taken into the mouth and diffused over the tongue and neighbouring parts. The remedy is not the most agreeable in taste; but we think it might be made more palatable in the form of gargles, should any practitioner be inclined to give it a trial.

—

Constipation in Pregnancy.—Nothing is more uncertain than the effect of constipation. One person will be in perfect health with only a single alvine evacuation weekly; while another will be quite unhinged if he pass many hours beyond the accustomed period of evacuation. Dr. Lemazurier has lately published a case, the prominent particulars of which we shall lay before our readers. He was sent for on the 8th July, 1823, to see a woman in the seventh month of her third pregnancy. She had been of a costive habit from youth, and had abused the use of purgatives. For the three last months she might be said to have had no passage through her bowels—notwithstanding a milk and cooling diet. She had no fever—the tongue a little discoloured—the pulse and appetite feeble. After taking any solid food she was troubled with dyspnœa and general malaise. The abdomen was much distended—the motions of the fœtus very distinct—the transverse arch of the colon was felt greatly distended with an immense accumulation of fæces. The ascending colon and sigmoid flexure were in a similar state. There was no pain on pressure of the abdomen. This state of things caused dyspnœa, anxiety, sleeplessness, tendency to faintness, and pains in the loins. She had been bled before our author's visit. He therefore confined his prescriptions to milk diet, rigid abstinence from solid food, diluents, lavements, semicupia. These, as might be expected, proved totally useless; and it was determined to wait till the accouchement was over, before the evacuation of the bowels was attempted! This event took place on the 11th of September, and a well formed child was delivered without much trouble. The situation of the colon immediately changed, and took up a position near the pelvis. Symptoms of abdominal inflammation and irritation now came on, in addition to milk fever, which was developed on the 14th of the same month. Linseed tea, fomentations, leeches, and the warm bath, did not effect much. Nevertheless, by means of glysters, and other very gentle measures, the fæcal accumulation appeared to break up, and there was an evacuation of two or three pounds of hard, brown, and fetid matters. But there remained a collection too large for expulsion. The unhappy patient was worn down by nausea, fever, colicky pains, meteorism of the abdomen, reten-

tion of urine, procidentia vesicæ; and expired on the 21st of September.

Dissection.—We shall pass over a number of minute particulars, in order to give only the essential pathological characters. The peritoneum was inflamed throughout its whole extent. There was a sero-purulent effusion in the cavity of the abdomen—false membranes over various portions of the intestines —some inflammation of the mucous membrane of the small intestines. The colon, from the cæcum to the rectum, was intensely inflamed, and its volume enlarged to a frightful extent. It was a foot in circumference, throughout the whole or nearly the whole of its length. It was filled with gas, and with $13\frac{1}{2}$ pounds (French) of solid fæces!

It is doubtful whether any means would have been successful at the time Dr. Lemazurier visited the patient; but we question the propriety of waiting two months for the delivery of a child before an attempt was made to open the bowels of the mother. Surely, if the life of a parent be more valuable than that of a fœtus in utero, it would have been perfectly justifiable to procure premature delivery rather than allow fæces to accumulate for two additional months in the colon. When the physician was called in, this measure unquestionably presented more chance of saving the patient's life than the measure pursued by the Medical Adviser.

—

Rupture of the Fallopian Tube.—In the process of utero-gestation the quantity of blood supplied to the parts concerned, and the activity of the vessels there must be prodigious. Rupture of a very small vessel about the ovaries or fallopian tubes, in the early weeks of pregnancy, will cause immense and fatal hæmorrhage in a very short time.

Mr. Bushell, of Crawford Street, has lately published a case of this kind in our cotemporary, the Medical and Physical Journal, of which we shall take a short notice. At 11 o'clock at night a pregnant female was suddenly seized with violent pain in the abdomen, and fainted away. On recovering a little she was placed in bed and appeared to be dying, in which state she continued till the morning. A practitioner had been sent for, but declined visiting the poor woman! We wish Mr. Bushell had given the name, for surely this was a most flagrant dereliction of duty. At 5 o'clock in the morning Mr. Bushell found the patient with hands and feet quite pale and cold—eyes glassy —great restlessness, but perfectly sensible. She could not bear the least pressure on the abdomen. Fomentations externally—stimulants internally. At 10, A. M. nearly in the same state. She expired about 12 o'clock.

This poor woman was of a lively and cheerful disposition

naturally; but her husband's health and affairs being embarrassed, she stifled her griefs, while she consoled and supported the drooping spirits of her partner.

Dissection. Abdomen slightly tumid. When opened, an abundant flow of bloody serum now took place, to the amount of three pints at least. On turning up the intestines, a large mass of coagulum, about two pounds, was found in the pelvis. The aorta, vena cava, and other abdominal blood-vessels, being examined, no rupture could be found. The uterus was but slightly enlarged—not more so than in the first month of pregnancy. Os uteri blocked up with viscid mucus. The internal surface of the organ was turgid, with a muco-flocculent lining the incipient decidual membrane; there was also an increase of vascularity at each tubal aperture. The left fallopian tube and appurtenances were healthy, as was the *right*, for three-fourths of its fimbrial extremity. On inflation it was pervious, and had the appearance as if an ovum had very recently passed through it. The uterine termination was enlarged and nearly twice the size of the left fallopian tube at the same part. On the posterior aspect of this enlargement, a small, irregular, jagged hole was visible, which would barely admit the extremity of a probe. On tracing the tube towards the uterus, a vesicle about half the size of a pea was discovered, and proved to be the ovum. The minute embryo, not larger than a small pearl barley, was perfectly distinct, floating in its liquor amnii. For several more minute particulars we refer to the original paper. We saw the recent preparation, and can vouch for the fidelity of Mr. Bushell's detail.

—

Self-performed Cæsarian Section.—Some marvellous cases of this kind are on record—but though on record, are of very suspicious authenticity. Dr. Mosely has related the case of a negro woman in Jamaica, who performed the Cæsarean operation on herself, by cutting boldly through the uterus, and extracting a child from the left side of the abdomen. This operation was performed with a butcher's knife. The child died of lock-jaw, but the mother recovered. Extraordinary and incredible as this case may appear, it is more than equalled by a case recently published in our respected transatlantic cotemporary, the New York Medical and Physical Journal, for March, 1823. It is reported on the authority of more than one or two medical men. The *operator* was a young servant girl, "one-fourth black," and only 14 years of age! while the family were at dinner, she went a little way from the house, and placed herself on a wreath of snow, where she was discovered by her master in the act of covering something with snow—which proved afterwards to be a naked child. As soon as perceived "she

immediately ran to the house with a second child hanging out of the wound, together with a considerable portion of her intestines." She was now surrounded by two medical men, Dr. Bassett and another. A wound was found near the centre of the epigastric region, from which the second fœtus was extracted. This wound was four inches in length, extending in a diagonal direction, as respected the abdomen, about two inches above the umbilicus, with another incision, at nearly a right angle with the former, extending toward the sternum. The lower part of the abdomen was considerably distended with blood. This was first evacuated by changes of posture and gentle compression. The wound was then sowed up, and a bandage applied. She recovered. "I should judge, says the reporter, from the appearance of the blood upon the snow (there being three several places where she evidently stopped,) that the incision was made *immediately* preceding the rupture of the membranes, and that the first child was delivered *per vias naturales*, the third pain after the rupture."

The above case was reported to the Rennsalaer Medical Society by Dr. Samuel M'Clellan, (who appears to have been the other physician in attendance) the president of the society, and by them forwarded to several of the American Journals. It is one of those extraordinary cases which we cannot easily believe, yet dare not positively deny.

—

Pressure on the Perineum.—We some time ago threw out a hint of our scepticism respecting the efficacy of pressure on the perineum, as a preventive of rupture of that part in parturition. Dr. Campbell, of Edinburgh, has taken us to task on that point, but we urged our opinions no farther. We now see in the same journal through which Dr. Campbell's animadversions were made, a short paper from the pen of Mr. Thompson of Whitehaven, in which he seems to agree with us, that pressure on the perineum, in parturition, is more likely to cause than prevent laceration of that part. "It is possible that the force used may facilitate what it is meant to prevent; and the perineum, instead of being saved, be eventually torn." We certainly think it is reasonable to expect that, when a substance, soft in comparison, is placed between two bodies strongly opposed to each other, if there be a disposition to give way, it is the softest body that is likely to suffer. Our author strongly recommends the plan of Dr. Barlow (a gentleman of great experience) which is, to keep back the head, when it is advancing too rapidly, by the fingers applied to the head itself, and not to the perineum. —*Ed. Journal.*

—

Sudden Parturition.—Every accoucheur in extensive practice

must have met with cases of remarkably quick parturition. These cases are chiefly interesting in a forensic point of view, as the plea of sudden birth has been sometimes urged in behalf of an unfortunate mother accused of destroying her illegitimate offspring. Instances of this kind, well authenticated, should therefore be put on record, for the aid of medical witnesses. Mr. Tatham (*Med. Repos. April*) has related two cases of unusually rapid parturition. One was a clergyman's wife, who, while sitting in her parlour, the rest of the family being at chapel, was taken ill (in the 9th month of utero-gestation) and obliged to go to the night chair. A great discharge of water took place, followed immediately by twin children, which dropped into the utensil. An alarm was given, assistance obtained, and the children rescued from their cold watery bed. They died within the week.

The other case was nearly similar. A woman felt three trifling pains, while sitting below stairs, but did not complain. In her passage to the bed-room a child was suddenly expelled, and fell on the floor of the lobby, bleeding profusely from the umbilical cord. By prompt assistance, Mr. Tatham saved both mother and child. In the first case it was the lady's first child —in the second, it was the fourth pregnancy.

INDEX TO VOLUME IV.

Arteries. See *Shearman* on, 1.
Averill's Treatise on Operative Surgery, 79.
Apoplexy, Causes of, 158.
Richard's Three Cases of, 161.
Abercrombie on Inflammatory Affections and Ulcerations of the Stomach, 225.
Abdomen, Encysted Tumour in. See *Gregory.*
Amenorrhœa treated by Injecting a Solution of Ammonia, 342.
Abortion induced by Thrusting a Seton Needle into the Uterus, 343.
Anatomy, 177. 362. 545.
Aqua Morgagni, 179.
Aqueous Humour, Membrane of, 179.
Aphonia, Pathology of, 192.
Artery, External Iliac, Ligature of, 204.
Subclavian, 205.
Auzoux's Anatomical Imitations, 364.
Andral's Case of Aneurism of the Aorta opening into the Trachea, 373.
Case of Diaphragmatic Pleurites, 378.
Acupuncturation in Convulsive Diseases, 390.
Arsenic. See *Christison.*
Aerostation, 683.
Attempt to Poison by Pounded Glass, 695.

Bayer's Cases of Ruptured Perinæum treated by Suture, 34.
Boyer on Strangulated Hernia, 100.
Diseases of the Kidneys and Ureters, 107.
Brayne's Cases of Biliary Calculi, 142.
Blood, Proximate Principles of, 174.
Brain, Case of Concussion of. See *Shipman.*
Brown's Case of Hydrocephalus Chronicus, 304.
Blood, Direct Passage of Substances into, 345.
Baillie on the Nerves, 364.
Bluhm on the Russian Constitution, 376.
Broussais' Case of Cancer in the Stomach, 378.
Bowen on Cataract, 280.
Botany, 399.
Blood, Circulation of. See *Carson—Williams.*
Blackett on Fumigation, 501.
Brennard on the Hymen, 507.
Body, Examination of, soon after Parturition, 544
Bailly on the Nervous System, 556.
Bellingeri, 557.
Bostock, Dr. 565.
Bayle on the Spinal Marrow, 571.
Bellingeri on the Blood, 583.
Bland on Croup, 589.

Copeland on Cerebral Excitement and Blood-letting, 372.
Chisholm on Constipation, 392.
Chaussier on Puerperal Convulsions, 397.
Carson on the Circulation, 409.
Calloway on Priapism, 512.
Castaing, Dr. 527.
Cancer of the Heart, 537.
of the Stomach, 542.
Combe on Anœmia, 584.
Chaussier on Belladonna, 592.
Christison on Arsenic, 644.
Chorea, 675.
Cubebs in Gonorrhœa and Chronic Rheumatism, 705, 706.
Contra Ptyalismum, 707.
Constipation in Pregnancy, 708.
Cæsarian Operation, self-performed, 710.
Carter on Dropsy from Ossification in the Heart, 46.
Croton Oil. See *Kinglake.*
Calculi, Biliary. See *Brayne.*
Cœcum, Ulceration of, 158.
Combustion, Spontaneous, 171.
Caries. See *Liston.*
Cumin on Urinary Vaginal Fistula, 321.

Chlorine with Water employed in Scarlatina, 343.
Confervæ, Metamorphosis of certain Species of, 344.
Collard on Softening of the Medulla Oblongata and Spinal Marrow, 349.
Chloruret of Lime, as a Disinfecting Agent, 351.
Carbonic Acid, Exhalation of, during Respiration, 351.
Contagious Principles, Transmission of, from the Lower Animals to the Human Species, 352.
Chlorurets, Observations on, and their Application to the Healing Art, 353.
Cerebral Disease, Pathology of, 193.
Cautery, Actual, in Sinuses and Fistulous Sores, 205.
Clapham Retreat, 225.

Dropsy from Ossification of the Heart. See *Carter*.
Partial, 172.
Davies' Case of Taliacotian Operation, 278.
Diabetes Mellitus, 211. 213.
Davy on the Absorption of Gases, 374.
Delpech's Excision of Tumour, 385.
Daniel on Charcoal in Constipation, 392.
Diaphragmatic Pleura, Inflammation of, 543.
Desmoulins on Vision, 559.
Defermon, M. 564.
Duncan on Venesection, 581.
Dropsy. See *Portal*.

Extraordinary Cases, 123.
Earle, Henry, on the Influence of Local Irritation in the Production of Diseases resembling Cancer, &c. 144.
Eye, on a Humour of, 154.
Epilepsy. See *Larrey*.
Eye, Operative Surgery of. See *Guthrie*.
Anatomy of, 178.
Eustachian Tube, Introduction of Probe from the Nostril, 203.
Emetics counteracting Salivation, 210.
Eastner's Case of Popliteal Aneurism, 389.
Ear, Anatomy of, 547.
Edwards, Dr. 561.
Elderton on Fracture Box, 605.

Fever, Yellow, in Spain. See *O'Halloran*.
Flourens and Fodera on the Brain, 156.
Fistula, Salivary, 159.
Fallopian Tube, Fatal Hemorrhage from Rupture of, 170.
Fistula, Urinary, Vaginal. See *Cumin*.
Fascia Superficialis, Anatomy of, 180.
Fractures, Scorbutus attending, 202.
Faraday on the Condensation of Gases, 219.
Flourens on the Nervous System, 366.
Fumigation. See *Blackett*.
Flagani on the Tensor Tarsi, &c. 546.
Fœtus, Rudiments of, in the Abdomen of a Boy, 700.
Fever Typhus, Treatment of, 706.
Fallopian Tube, Rupture of, 709.

Gregory on Small Pox subsequent to Vaccination, 9.
Gaitskill's Case of Laceration of the Perineum, Urinary Bladder, and Rectum, 38.
Goodeve's Case of Hernia Cerebri, 41.
Guthrie on the Operative Surgery of the Eye, 258.
Gregory's Case of Encysted Tumour in the Abdomen, 280.
Geoghegan on Hernia, 327.
Geoffroy's Osteologié, 363.
on the Respiration of the Fœtus, 365.
Gaugiran's Case of Cerebral Fungus, 379.
Gartner on a Duct in the Cow, 468.
Geoffroy, St. Hiliare, 550.
Gordon on the Brain, 566.
Gaspard on Putrid Diseases, 585.
on Rabies, 669.
Greenhow's Case of Internal Hernia, 676.
Ganglia, Semilunar, Inflammation of, 704.
Gonorrhœa, Cubebs in, 705.

Hernia Cerebri. See *Goodeve*.
Hutchinson on the Tread Mill, 48.
Howship on the Urine, 88.
Hernia, Strangulated. See *Boyer*.
Hip Joint, Amputation of. See *Syme*.
Hydrocephalus Chronicus. See *Brown*.
Case of, in an Adult Female, 350.
Heart, Singular Affection of, 190.
Hypertrophia of, 190.
Hydrothorax, Nature and Causes of, 191.
Hydrophobia, Sublingual Pustules in, 194.
Hale's Prize Dissertations, 364.
Hip Joint, Amputation of, 390.
Hymen. See *Brennard*.
Homicide, 528.
Heart, Hypertrophy of, 544.
Holmes' Case of Malformation, 575.
Hahnemann, Dr., 590.

Hydrocyanic Acid, 596.
Harris, Mr., Death of, 683.
Hydrophobia, 702.

Irritation, Local, Influence of. See *Earle.*
Intestine, Excreted, Case of, 157.
Ilife's Case of Urinary Calculus, extracted through a Fistulous opening in the Abdominal Parietes, 285.
Jones on Inflammation of the Spinal Cord, 332.
Intus-susception, Case of, 350.
Jurisprudence, Medical, Smith's Lectures on, 352. 397.
Iris, Structure of, 179.
Intus-susception, Case of, 196.
Iodine, Uses of, 209, 391.
Itard on Cerebral Inflammation, 375.
Infanticide, 531, 532.
Jacobson, Professor, 551.
Jones on Inflammation of the Spinal Marrow, 559.
Ipecacuanha in Hæmatemesis, 596.
Jejunum, Rupture of, 674.

Kinglake on Croton Oil, 59.
Kidneys and Ureters, Diseases of. See *Boyer.*
Kidneys, Effects of the Extirpation of, 175.
Kina, Use of the Sulphate of, in Intermittent Fever, 347.
Knox on the Eye, 364.
Kennedy on Gangrene of the Heart, 575.
Key on Lithotomy, 604.

Lungs, Obstruction of Blood in. See *Williams*, 20.
Lisfranc on the Uvula, 155.
Lower Jaw, Case of Amputation of, 159.
Lip, Cancer of, 166.
Larrey on Epilepsy, 167.
Leeches, Preservation and Breeding of, 176.
Liston on Caries, 290.
Lisfranc on the Uvula, 336.
Lallemand on Softening of the Brain, 341.
on Excision of the Lower Jaw, 599.
Lithotomy, Lateral Operation, 178.
Posterior Operation of, 197.
Leeches, 202.
Lawrence and Coates on Absorption from the Brain, 368.
Leprosy of Norway, 373.
Lisfranc's New Diagnosis of Fractures, 380.
Lungs, Structure of. See *Reisseisen.*
Lobstein on the Sympathetic Nerve and its Ganglion, 454.
Larrey on the Nerves, 558.
Louis, M. on the Heart, 577.
Leach *v.* Veitch, 684.

Malacarne's Case of Laceration of the Gravid Uterus, 165.
Macleod on the Use of Prussic Acid, 288.
Milk, Vegetable, 351.
Membrana Pupillaris, 180.
Mania, Pathology of, 192.
Midwifery, 215.
Meckel's Comparative Anatomy, 362.
Magendie on Hydrophobia, Treated by Injecting Water into the Veins, 392.
Materia Medica and Chemistry, 398.
Marrow, Spinal. See *Ollivier.*
Moreschi on the Erectile Tissue, 487.
Maclure on Obliterated Urethra, 513.
Magendie on the Corpora Striata and Tubercula Quadrigemina, 534.
Medicine, 587.
Mikisch on Anomalous Disease, 588.
Maxwell on Injections, 594.
Hydrocephalus, 666.
Marischal on Fungous Tumour of the Upper Lip, 601.
Miguel on the Pregnant and Puerperal State, 632.
Morphini, Acetate of, Action upon the Living System, 688.
Monument to the Memory of Dr. Baillie, 696.

Nervous System, Influence of over the Secretion of Urine, 345.
Nervous Functions, Nature of, 187.
Neuralgia, Carbonate of Iron in, 212.
Treated with Ol. Terebinth, 212.
Nerve, Sympathetic. See *Lobstein.*
Nerves. See *Bailly, Bellingeri,* and *Larrey.*
Neuralgia, Case of, 702.

O'Halloran on the Yellow Fever of the South and East Coasts of Spain, 66.
Obituary—Dr. Baillie, 149.
Ovum, Formation of, in the Mammalia, 174.
Œsophagus, Obliteration of in Consequence of Inflammation, 340.
Optic Nerve, Passage of through the Sclerotica, 178.
Optic Nerves, Decussation of, 181.
Opium, Dissolved in Nitric Acid, a Remedy in Hectic Fever, 311.

Ollivier on the Diseases of the Spinal Marrow, 433.

Perineum. See *Bayer, Gaitskill.*
Palate. See *Snell.*
Physiology of the Nervous System, 241.
Prussic Acid. See *Macleod.*
Economical Method of making, 344.
Political Medicine, 353.
Petit, Canal of, 179.
Physiology, 182.
Pathology, 188.
Plague, Pathology of, 190.
Prussic Acid, 212, 221.
Perineum, Lacerated, Treatment of, 217.
Persons Executed, Certain Phenomena in, 218.
Prevost and Dumas on Urinary Secretions, 370.
on Muscular Contraction, 371.
Pthisis, incompatible with Intermittent, 374.
Prichard's Pathology of Paralysis, Epilepsy, and Chorea, 377.
Parotid Gland, Extirpation of, 386. 388.
Pylorus, Diseases of, 400.
Pancreas, Diseases of, 405.
Priapism. See *Calloway.*
Peritonitis resembling Poison, 529.
Poisoning by Nux Vomica, 531.
Pulvis Antimonialis, 598.
Portal on Dropsy, 606.
Pregnant and Puerperal State. See *Miguel.*
Payne's Case of Puerperal Fever, cured by Oil of Turpentine, 677.
Parturition, Sudden, 711.

Richard's Three Cases of Apoplexy, 161.
Rheumatism, Acupuncturation in, 206.
Roux on Spontaneous Perforation of the Stomach, 376.
Reisseisen on the Structure of the Lungs, 472.
Ripley's Case of Fracture of the Cranium, with Depression, 508.
on Strangulated Hernia, 509.
Rousseau on the Teeth of the Guinea Pig, 537.
Rapou on Baths, 593.
Rheumatism, Chronic, Cubebs in, 706.

Shearman, Wm. on the Power of the Arteries in carrying on the Circulation, on its Nature, and the Manner of its Exertion, 1.
Small Pox. See *Gregory, Stoker.*
Snell's Case of Congenital Division of the Hard and Soft Palates, 37.
Surgery, Operative. See *Averill.*
Skin, Discolouration of, 156.
Staphyloraphia, Operation for, 160.
Stomach and Œsophagus, Spontaneous Perforation of, 171.
Spinal Chord, Functions of, 173.
Stomach, Inflammatory Affection and Ulceration of. See *Abercrombie.*
Syme's Case of Amputation at the Hip Joint, 270.
Shipman's Case of Concussion of the Brain, 283.
Stoker on Small Pox after Small Pox and Vaccination, 312. 586.
Salivation, New Remedy for, 352.
Soemmering, Yellow Spot, Fold, or Foramen of, 179.
Spleen, Pathology of, 188.
Enlarged Case of, 195.
Surgery, 197. 598.
Mode of Teaching, 200.
Acoustic, Buchanan's, 203.
Shearman on Chronic Debility and Indigestion, 208.
Symphysis Pubis, Division of, 216.
Syphilitic Inoculation, 374.
Strombio on the Pathology of the Pellagra, 376.
Sachero on the Pulse, 377.
Syphilis, Inoculation of, and Broussaism, 540.
Scoutteten on the Peritoneum, 578.
Syphilis, 602.
Swan on Calculi and Diseases of the Kidneys, 673.
Speech and Hearing, Loss of, 700.

Tread Mill. See *Hutchinson.*
Tendons, on the Constituents of, 154.
Taliacotian Operation. See *Davies.*
Tongue, Inflammation of, cured by Incisions, 346.
Trismus, Tetanic, Acupuncturation in, 203.
Taliacotian Operation, 207.
Tar, Counteracting Salivation, 211.
Tetanus, Treated with Oil of Turpentine, 214.
Teideman on the Nerves of the Uterus, 362.
Todd on the Reproduction of Members, 368.
Turpentine in Purpura Hæmorrhagica and Neuralgia, 595.
Trial for Poisoning by Sulphuric Acid, 690.
Trial for Murder by Blows on the Head, 692.